The OIL WEEKLY

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The OIL WEEKLY and The COMPOSITE CATALOG for the drilling-producing-pipeline industry

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LOOKING AHEAD
. . . with the Editor

GEOCHEMICAL research is resulting in discoveries that are constantly shedding more light on this difficult science.

For example, faulting and so-called dry zones in an area no longer present a problem. Where the reservoir is a definite geologic structure and a concentration of hydrocarbons exists around the edges, there will be found a marked concentration of both liquid and gaseous hydrocarbons along the down-throw side of the fault, whereas there will be a negligible quantity along the up-throw side. This fact has been established in the Heidelberg pool in Mississippi.

The important principles of what may be called the newer phases of this science will be discussed in an article, "Newer Phases in Geochemical Technique," by Allen Bronston, National Oil Laboratories, to appear in an early issue.

THE OIL MAN'S CALENDAR

OCT. 1- 2	American Association of Drilling Contractors, Skirvin Hotel, Oklahoma, City.
9	FPC Gas Hearings, Room 609, County Court House, Oklahoma City.
12	California Natural Gasoline Association, 20th Annual Fall Meeting, Los Angeles, Biltmore Hotel.
14-17	Independent Petroleum Association of America, Membership Meeting. Mayo Hotel, Tulsa.
24-25	American Gas Association Annual Meeting, New York, Engineering Societies Building.
30	FPC Gas Hearings, Room 245, Post Office Building, New Orleans.
NOV. 2- 3	Ninth Annual Secondary Recovery Conference, State College, Pennsylvania.
12-15	American Petroleum Institute, Silver Jubilee Meeting, Stevens Hotel, Chicago.
26	Independent Natural Gas Association, Annual Meeting, Dallas.
27	FPC Gas Hearings, Dallas.

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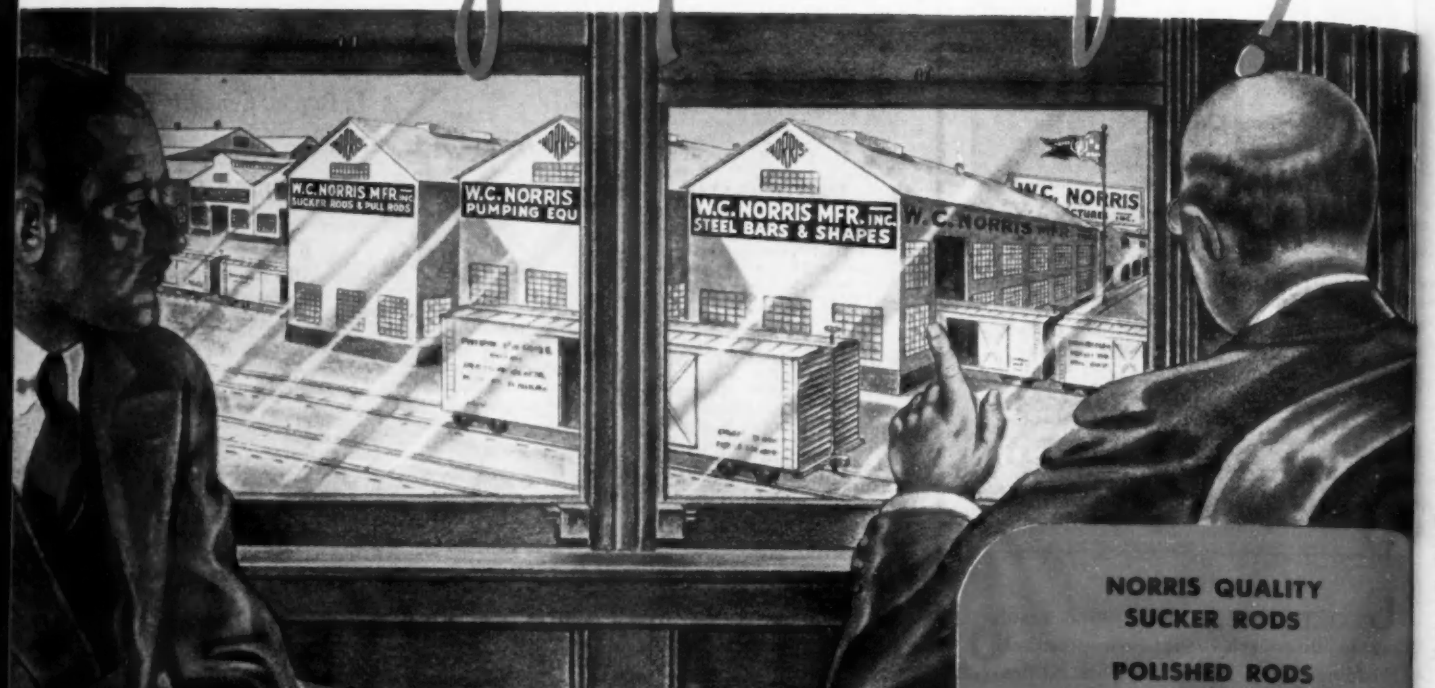

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The Changing Panorama

Give Business Time To Turn Around!

SOUND advice is offered to both labor and management in the current strike situation by Eric Johnston, president of the Chamber of Commerce of the United States. In *Business Action*, for October 1, he writes:

"To labor, confronted with loss of pay, I would say this: I urge you to take a fresh look at your wage demands and see if they are not excessive.

"Give management time to turn around. Labor, I am sure, will understand that in many, many cases, management cannot accurately predict what its costs will be when it is converted into full production. Management can better judge its position then. I ask labor to be far-sighted enough to give management a chance to reconvert, to get its breath, and to get into the stride of peacetime production. Then it can sit down with management and find out what fair adjustments can be made.

"Labor should be willing to accept moderate increases at this time, leaving the way open for futher negotiations at a future time.

"To both labor and management, I would say this: Do an honest job of collective bargaining. Sit down around the conference table and work your problems out. Collective bargaining is the civilized, democratic process of settling differences. This democratic process involves sitting down together for an exchange of viewpoints. It is the answer to whatever selfishness may prevail in a situation of this kind and reveals any misunderstanding which may exist."

Technologists for Future Big Problem

HOUSE Resolution 2827, intended to remedy the situation that is draining this country of all its young scientists and technologists, deserves the support of industry. If progress in technology is to continue, attention must be given to this matter.

There was some justification for cutting deferments to the bone as long as we were fighting Germany and Japan, though this country was the only nation that failed to provide deferments from military service for young technologists. Now, however, technical students and those majoring in science, should be encouraged to complete their courses.

The Philadelphia Quartz Company, emphasizes in its *Silicate P's & Q's*, that "a comparatively few thousand control chemists are the key to millions of jobs, for without technical control plants cannot operate. . . . The tragic fact is that there are no chemists available for employment, there will be almost none released from the services, the colleges have none and will have none for four years after they re-open courses, or for seven years for those who take a Ph.D. to qualify for research work.

"Perhaps we should petition the powers that be to establish a reverse lend-lease scheme whereby we might borrow chemists from our allies who had the native intelligence to recognize that in a technological world it is fatal to exhaust the supply of technologists."

Another alternative is to write your congressman about HR 2827, which seems to have been buried in committee by "official pressure."

Salvage of used tin cans by the American public in the last three years added about 6,000 tons of tin to the nation's critically needed stockpile.

How to Kill Off Inventor Incentive

AMERICAN supremacy in invention and technological progress will be endangered by compulsory licensing of patents as set forth in several bills now pending in Congress, R. J. Dearborn, chairman of the committee on patents of National Association of Manufacturers, believes.

"This country's growth to the status of the world's greatest industrial nation has been due largely to its patent system," Dearborn said. "Compulsory licensing of patents would strike at the very fundamentals of the system. It would compel the holder of a patent to grant licenses to others to produce his invention and would, in effect, mean a sharing of inventions, which is foreign to our American way of life.

"By forcing an inventor to give up his exclusive rights before he has an opportunity to reap any reward, the full incentive which the patent system is intended to give would be largely removed.

"Furthermore, if the patent holder is forced to license to all who may apply, he will be unable to obtain risk capital for the commercialization of his invention. Investors are willing to exploit a promising invention largely because of the exclusive rights for 17 years given an inventor by the grant of a patent.

"Compulsory licensing also would adversely influence research. There would be a tendency for inventors to keep their inventions secret which would defeat the chief purpose of the patent laws—to encourage disclosure."

It is reported from Russia that seismic prospecting during the period of the war has increased the belief that oil deposits beneath the Caspian Sea are larger than those beneath the surface of the Apsheron Peninsula. More than a third of the oil produced in the Baku area comes from wells completed at points under the sea.
—Bulltin of the American Association of Petroleum Geologists.

New York No Spot For Casual Visiting

IF YOU are planning to go to New York soon, and can possibly avoid it, don't go! Thus writes a friend who is there now and who says that in the 32 years he has been going to New York he has never seen anything like the congestion there now. He writes:

"The hotels limit you to 5 days stay, and while there have been instances recently of a person staying in a hotel longer than that, they are rare and the guest feels about as welcome as a polecat in a chicken house. Hotel managers now specialize in bouncing! The town is filled with returning servicemen and their families, with businessmen in New York on postwar conversion business. If anybody is there for a holiday, he has a peculiar sense of what makes a pleasant vacation. Hotels say that there is no prospect for a change for a year or more.

"I have never seen anything like it in my life. Some of you boys who have thought that Tulsa or Houston were crowded during oil show times, haven't even the beginning of a conception of how things are in New York. To eat you line up in a queue at a restaurant. To get into a show—well, if you get into one it is because you bought your tickets eons ago. I tried to get tickets to one popular show and was told 'Sold out till in December' and it wasn't one of the most popular ones, either.

"If you don't have to go to New York, skip it."

Geophysical Parties Busy on Foreign Soil

A NOTABLE increase in geophysical prospecting in foreign countries has taken place during the past year, according to *The Wall Street Journal*. A year ago there were 64 United States crews exploring in foreign nations. Today there are 105 geophysical crews, with the Caribbean as the most active area. By the end of this year, 61 parties are scheduled to be working there.

Mexico, Central America and the West Indies have 21 parties. South American countries not bordering on the Caribbean are being worked by 12 parties, and 11 crews are prospecting in the eastern hemisphere.

Russia, it is said, wishes to buy 40 sets of seismograph exploration tools from this country, but does not wish the services of United States geopsysicists.

It is pretty generally agreed that South America has a great deal more oil than has been discovered, and some believe that when it is prospected as thoroughly as the United States have been, South America may out-produce us.

Rig Mounted On Wheels

Ingenious arrangement permits quick dismantling, moving and erection

By
HARRY A. HESS
Staff Writer

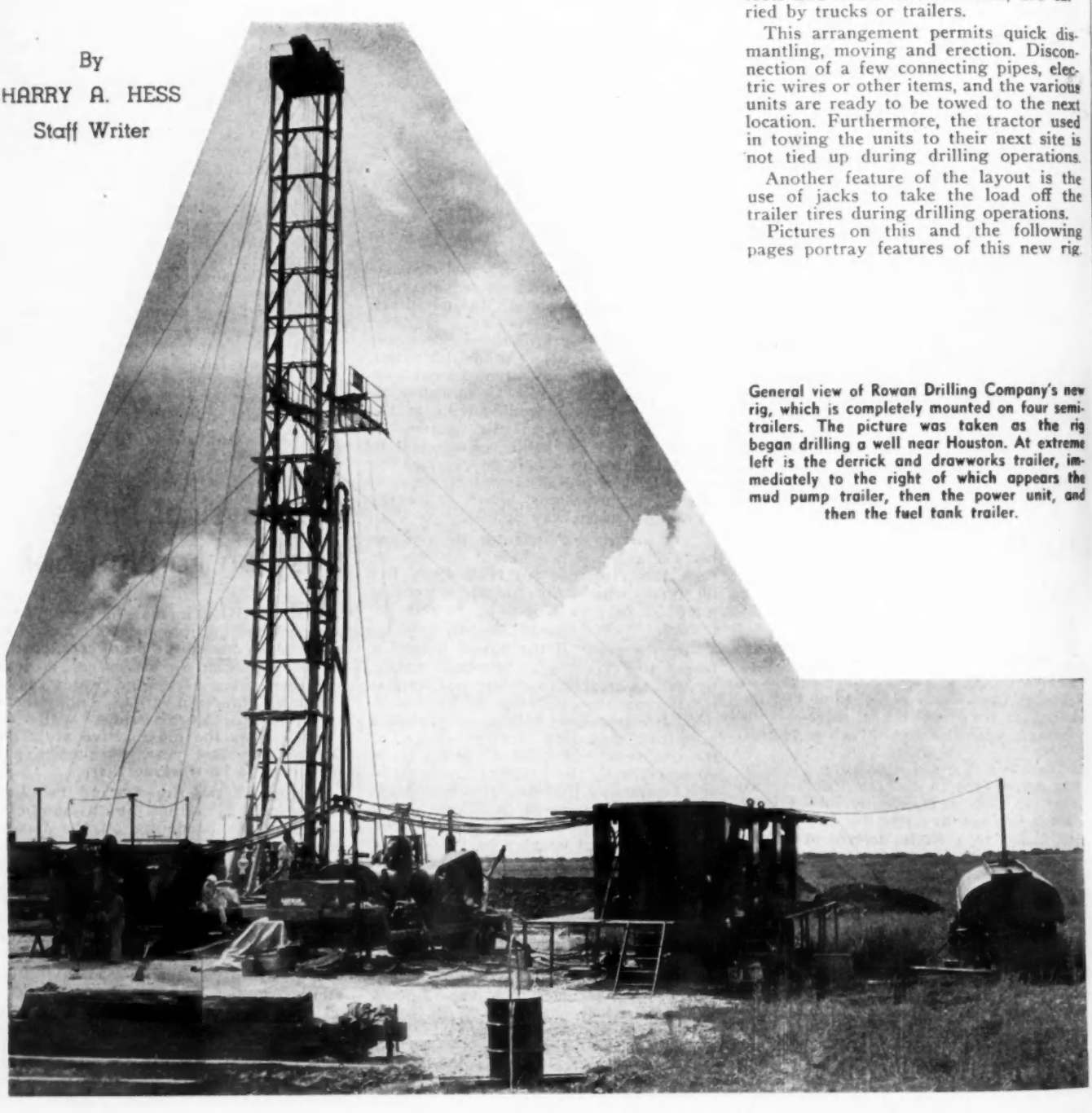
A DRILLING rig mounted entirely on wheels was placed in operation recently by Rowan Drilling Company. Various units of the rig, which is capable of drilling to 7500 feet, are mounted on four semi-trailers. One of the trailers carries the diesel-electric power unit, another the mud pump assembly, another the derrick and drawworks, and the other the fuel tank.

The derrick floor, substructure, rotary table and blowout preventer comprise another unit. However, this unit is not mounted on wheels, but is erected on skids for easy portability. The drill pipe, of course, is moved on a regular pipe truck, the remainder of the equipment, tools and miscellaneous items, are carried by trucks or trailers.

This arrangement permits quick dismantling, moving and erection. Disconnection of a few connecting pipes, electric wires or other items, and the various units are ready to be towed to the next location. Furthermore, the tractor used in towing the units to their next site is not tied up during drilling operations.

Another feature of the layout is the use of jacks to take the load off the trailer tires during drilling operations.

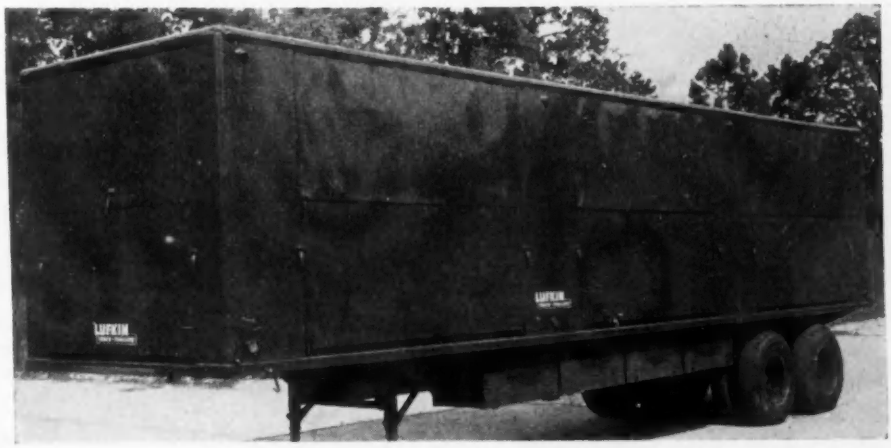
Pictures on this and the following pages portray features of this new rig.

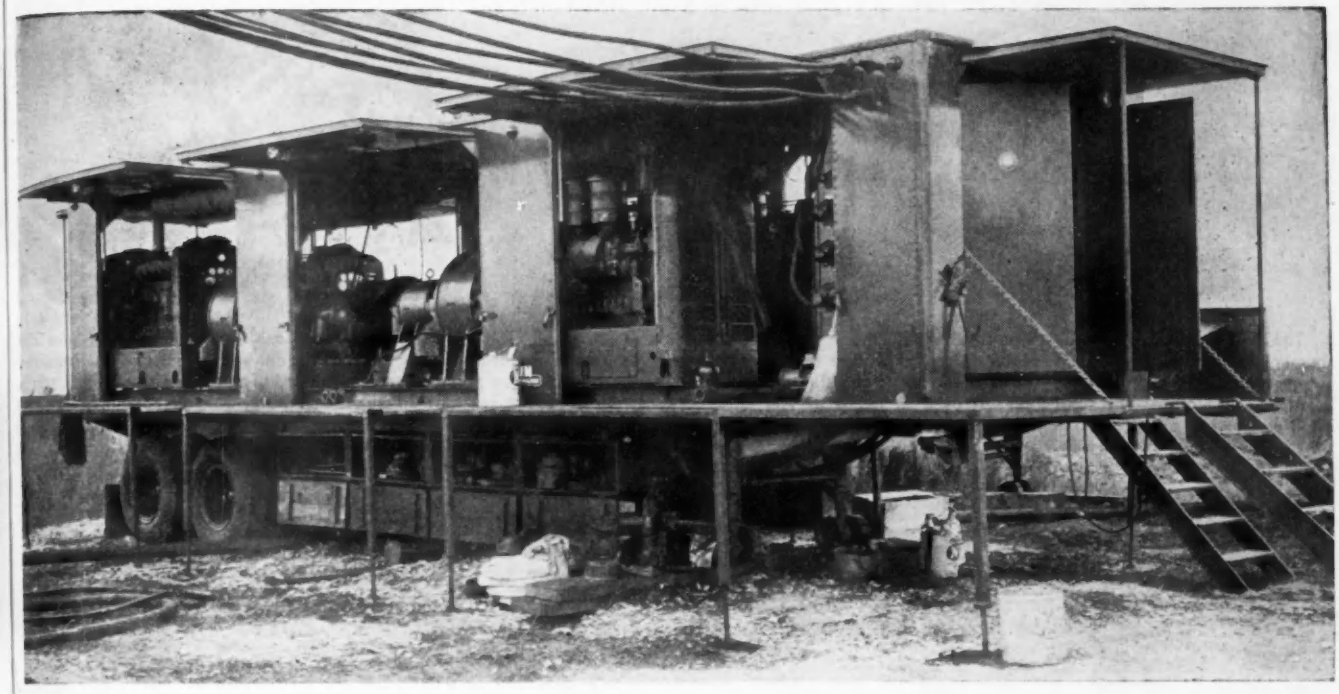


General view of Rowan Drilling Company's new rig, which is completely mounted on four semi-trailers. The picture was taken as the rig began drilling a well near Houston. At extreme left is the derrick and drawworks trailer, immediately to the right of which appears the mud pump trailer, then the power unit, and then the fuel tank trailer.

Power Unit on Rowan Rig

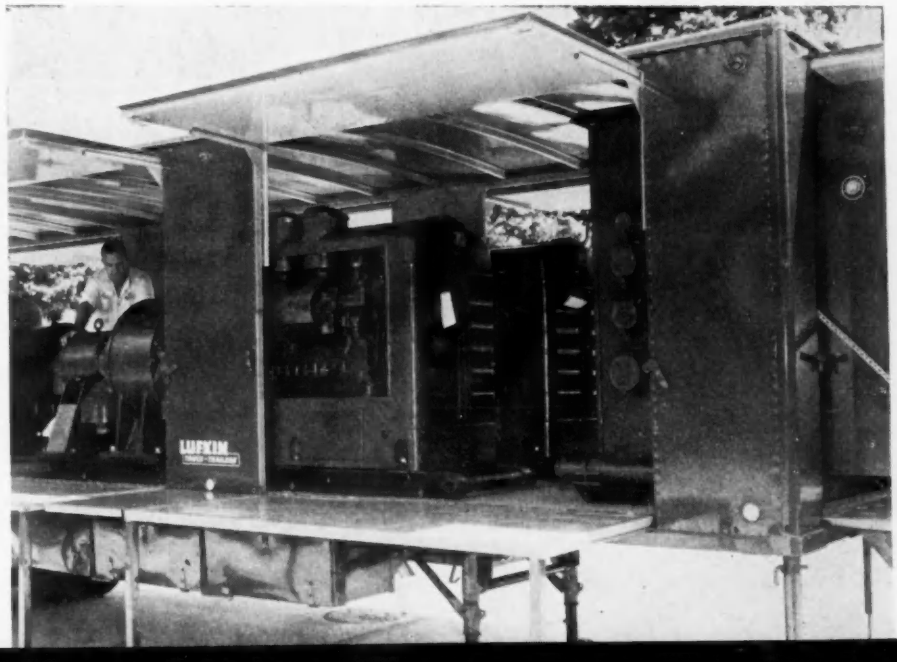
When on the road the power unit is completely enclosed, as shown at right. This protects the electrical parts from the weather, which is important if the rig should be stacked for any length of time. Total weight of the power unit, including the building, engines, generators and trailer, is 55,000 pounds. It is 33 feet long, 8 feet wide and 11½ feet high. The rear end is carried on eight wheels mounted with 10.00 x 20-inch tires. The front end, of course, is carried by the tractor during moving operations, but rests on retractable supports, shown here, when spotted on drilling locations. Towing tractors connect to all the trailers by simply backing under the front end of the trailer and engaging a small pin.



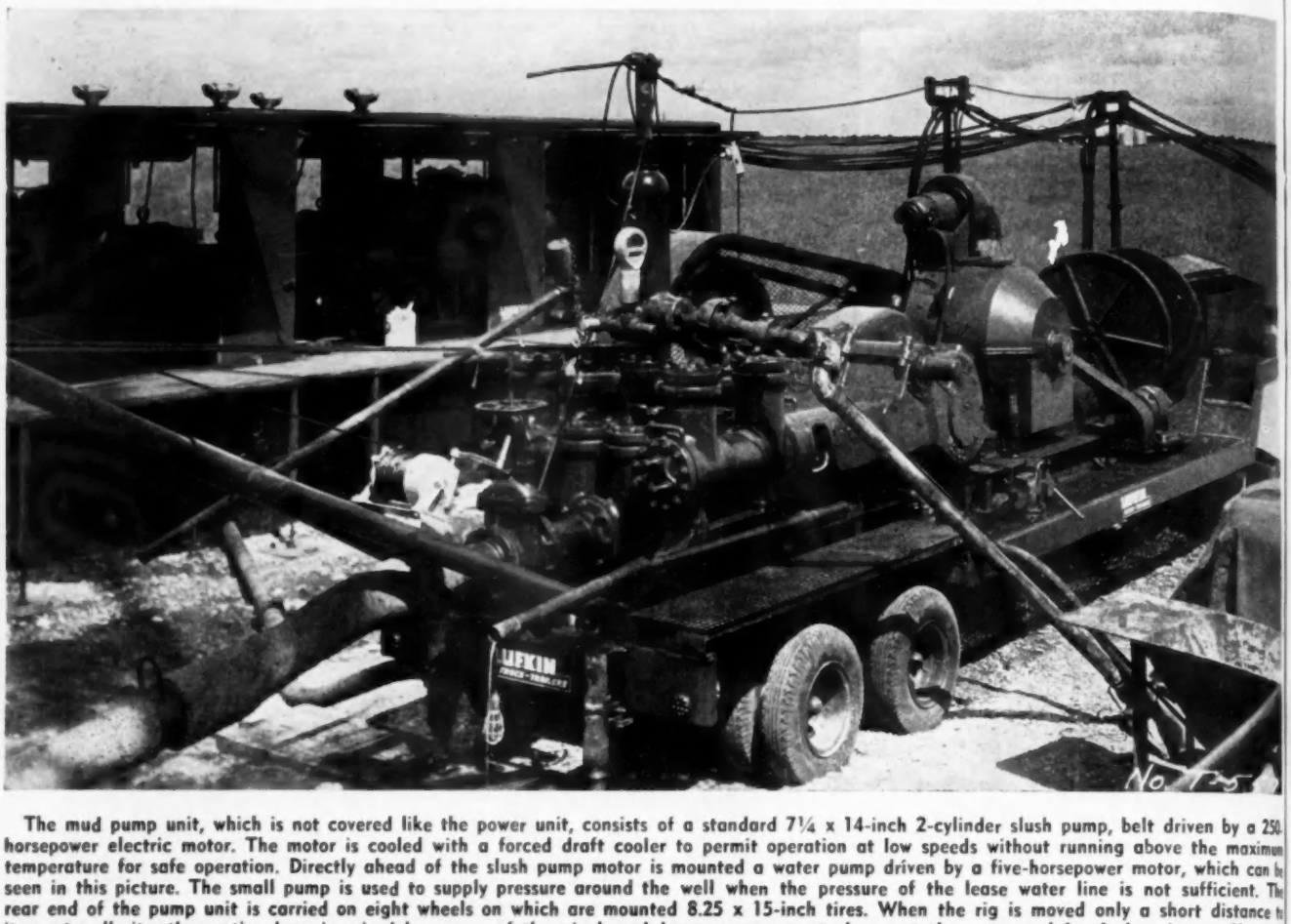


The power unit on a well location is shown above. The divided panels that enclose the unit when it is not in use form platforms and awnings. The lower half of the panels fold down to make the platforms, which are supported on adjustable jacks, hinged to the top of the panels. The upper half of the panels fold up to form awnings. Tool boxes are built into the space beneath the trailer bed, and are shown here with their doors open.

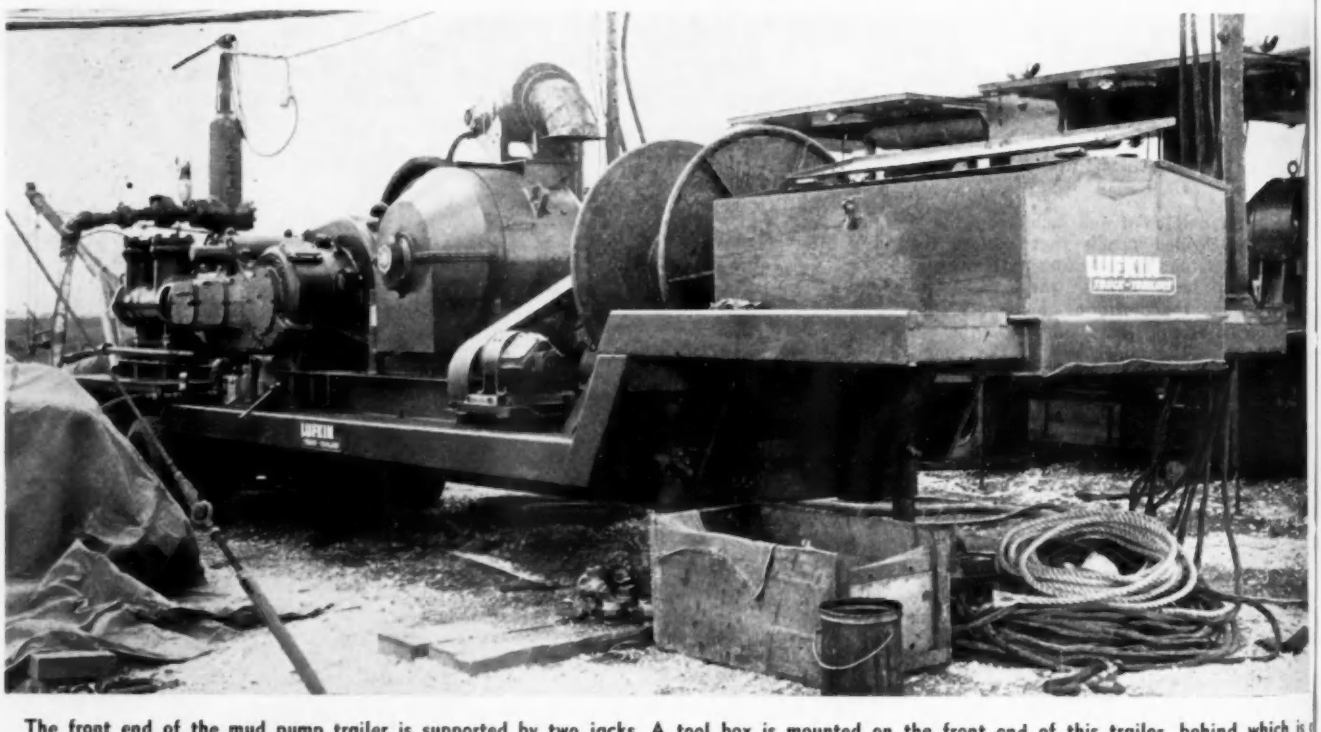
The power unit houses four high-speed 150-horsepower diesel engines, each directly connected to a 65-kilowatt generator. Two of the units are shown in the photograph at right. The electrical control panel is in the enclosed section at the right side of this picture. Each engine-generator combination weighs 5000 pounds. The engines are equipped with special exhaust manifold covers, which reduces the fire hazard sufficiently to allow the unit to be set close to the well. Each engine and its generator are mounted on the usual oil field skid, providing easy means of replacing any of the units.



Mud Pump Unit on Rowan Rig

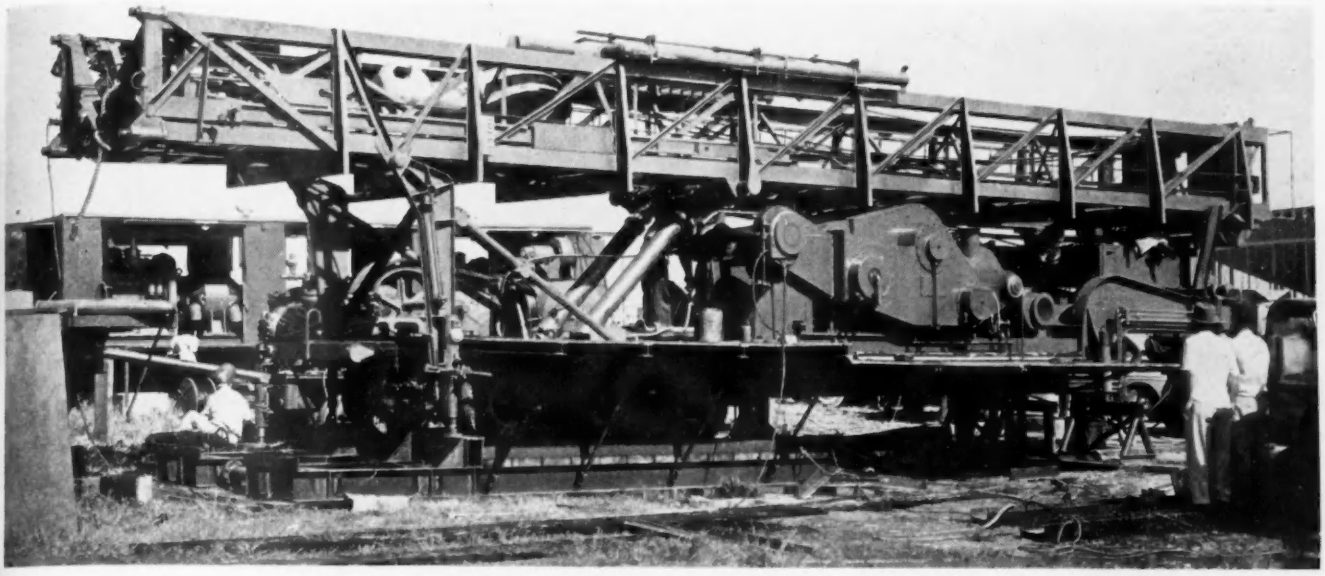


The mud pump unit, which is not covered like the power unit, consists of a standard 7¼ x 14-inch 2-cylinder slush pump, belt driven by a 250-horsepower electric motor. The motor is cooled with a forced draft cooler to permit operation at low speeds without running above the maximum temperature for safe operation. Directly ahead of the slush pump motor is mounted a water pump driven by a five-horsepower motor, which can be seen in this picture. The small pump is used to supply pressure around the well when the pressure of the lease water line is not sufficient. The rear end of the pump unit is carried on eight wheels on which are mounted 8.25 x 15-inch tires. When the rig is moved only a short distance to its next well site, the suction hose is raised by means of the winch and boom arrangement shown at the extreme left of the picture. However, when the unit is to be moved long distances, the hose is disconnected and laid beside the pump.



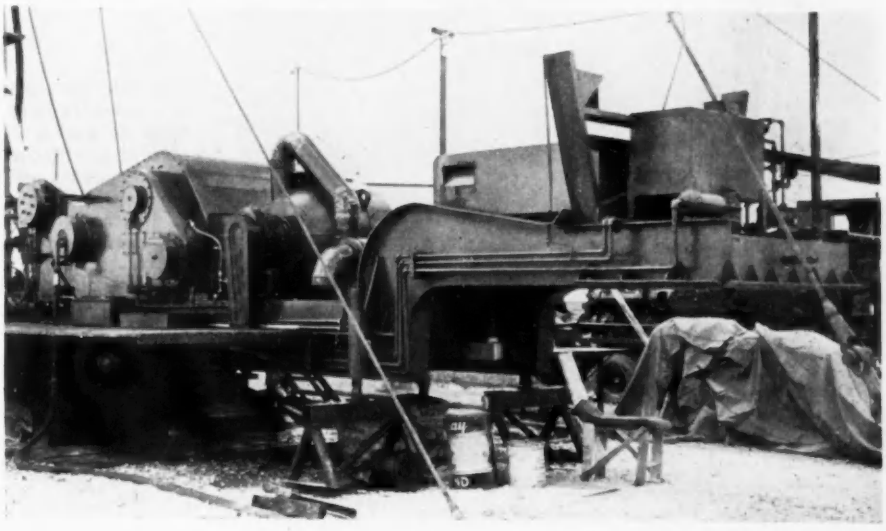
The front end of the mud pump trailer is supported by two jacks. A tool box is mounted on the front end of this trailer, behind which is a spool on which electric cables are wound for moving. Weighing 45,000 pounds, the mud pump unit is 24 feet long.

Derrick and Drawworks Unit on Rowan Rig



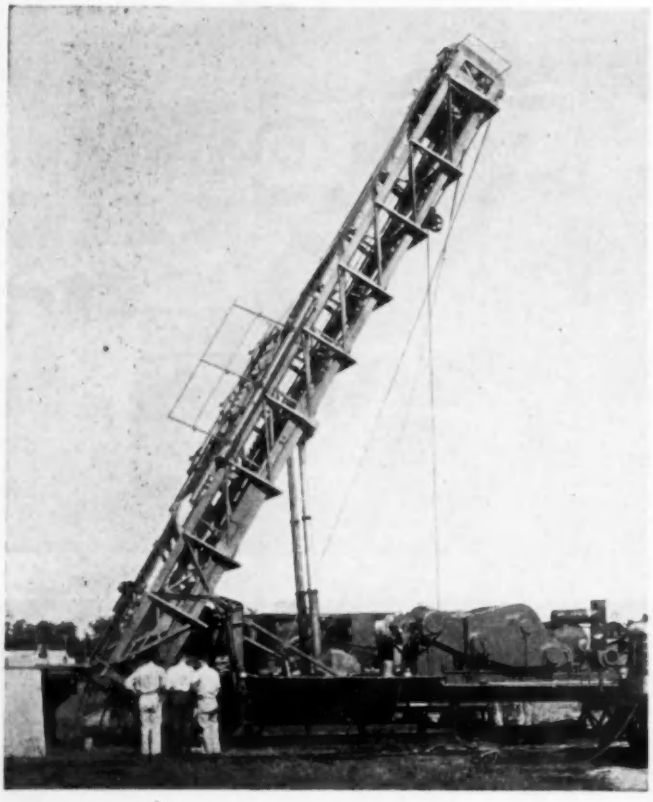
The derrick and drawworks are mounted on one trailer, shown above. It has a total weight, including the trailer, of 70,000 pounds. For moving purposes the 90-foot derrick telescopes down to 50 feet in length, and then folds over the drawworks. The blocks remain strung up during moving operations. The rear end of this trailer is mounted on 12 wheels which have 10.00 x 15-inch tires. At the well site, the trailer is run upon a foundation made of steel I-beams and heavy bridge boards. Weight is taken off the tires by jacks that rest upon the ramp.

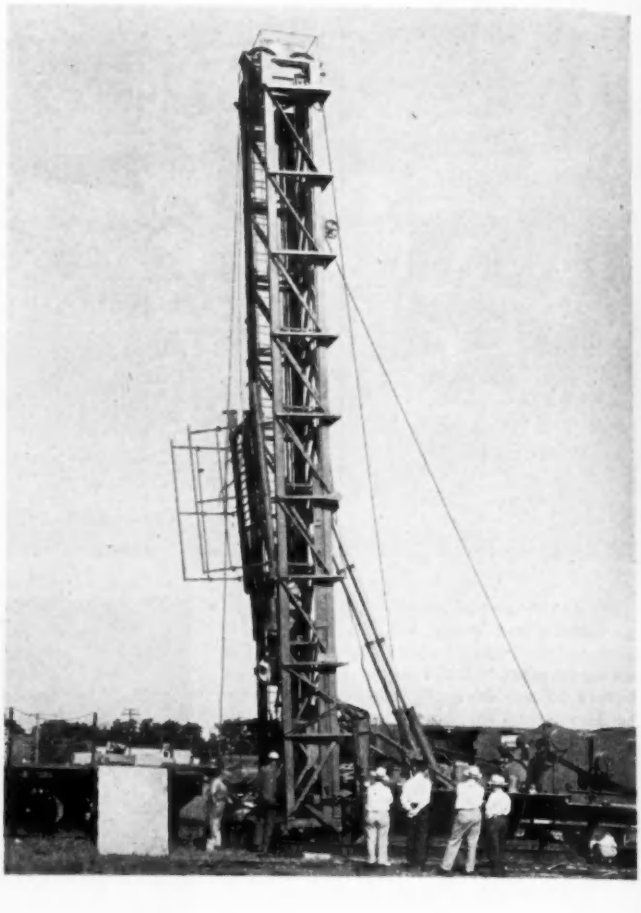
At right is close-up of foundation beneath the rear end of the derrick-drawworks trailer. Heavy boards form a matting that rests upon the ground. Upon this board mat are placed I-beams tapered at one end. Heavy boards then form a flooring above the I-beams for the wheels. One of the supporting jacks located beneath the trailer is visible. The ramp brings this unit level with the rotary table. The steel grilling visible at the top of this photograph is removable platforms that form a part of the rig floor, to provide working space around the drawworks.

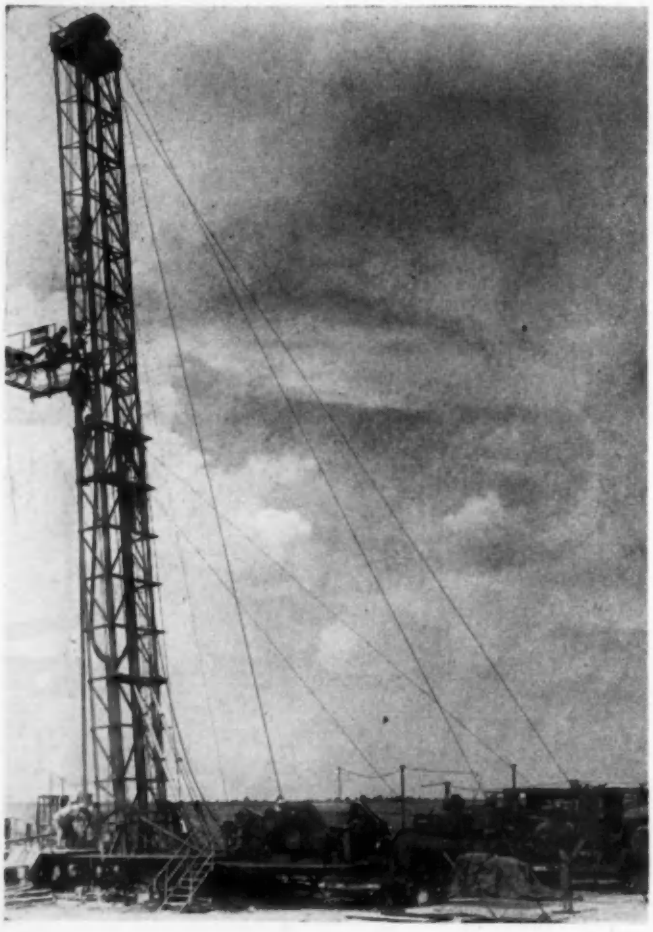


The front end of the derrick-drawworks trailer, at right, is supported during drilling operations by two steel horses. Each has a base to prevent sinking into the ground. Two leveling jacks, one on each side of the trailer, rest upon I-beams that comprise the top of each horse. Also shown in this picture is the 250-horsepower drawworks motor. This motor also is force draft cooled to prevent overheating at low speeds.

Derrick and Drawworks Unit . . . Continued





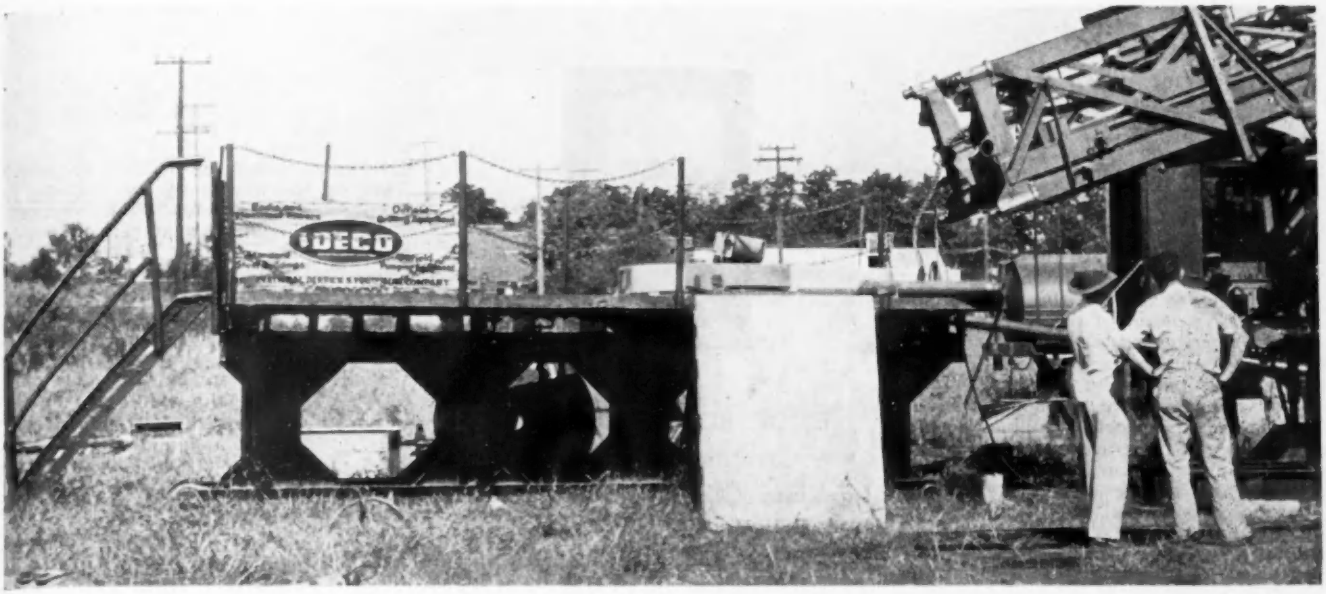


The derrick is raised from its horizontal position over the drawworks to a vertical position for drilling by means of hydraulic rams. Pictured on this page is the derrick in various stages of erection. In these views the hydraulic rams are shown immediately to the right of the derrick base. In the photograph at top left, the derrick is halfway between the horizontal position and vertical. A pump belted to the drawworks motor provides the pressure needed to operate the hydraulic rams.

At top right, the derrick reaches a vertical position. At this stage the derrick has a height of 50 feet. The finger boards and stand for the derrick man are in one assembly, and are hinged to allow them to fold up against the derrick when the rig is being moved.

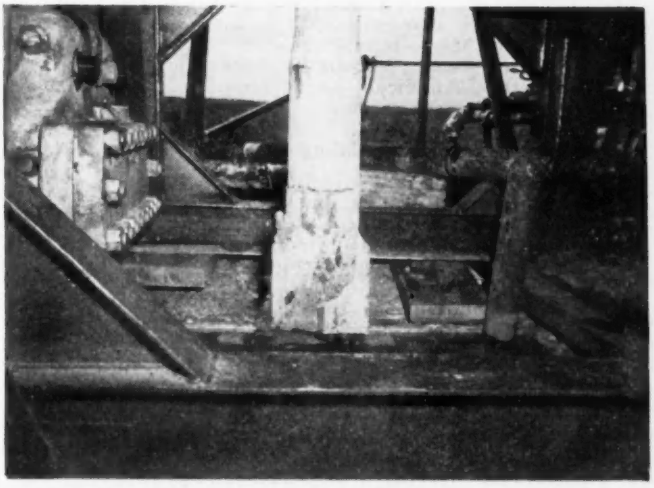
At left, the derrick as it appears during drilling operations. It has been extended to its full 90-foot height, and the finger board unfolded. After the mast is raised to a vertical position by means of the hydraulic rams, a wire line and yoke arrangement is used to extend the height of the derrick from 50 to 90 feet. This is accomplished by hooking the traveling block into a yoke on the end of two wire lines which are carried through sheaves on the bottom of the top section of the mast and dead ended to the top of the stationary part of the mast. When the blocks are pulled up into the derrick, the top section of the derrick is raised, and then bolted to the top girt of the bottom section. The blocks are then lowered, and the yoke and wire lines tied back out of the way until the well is completed. Guy wires are placed at four points on the mast, and the rack for the pipe securely guyed. The derrick and crown block have a capacity of 250,000 pounds.

Rotary Table, Substructure Unit on Rowan Rig

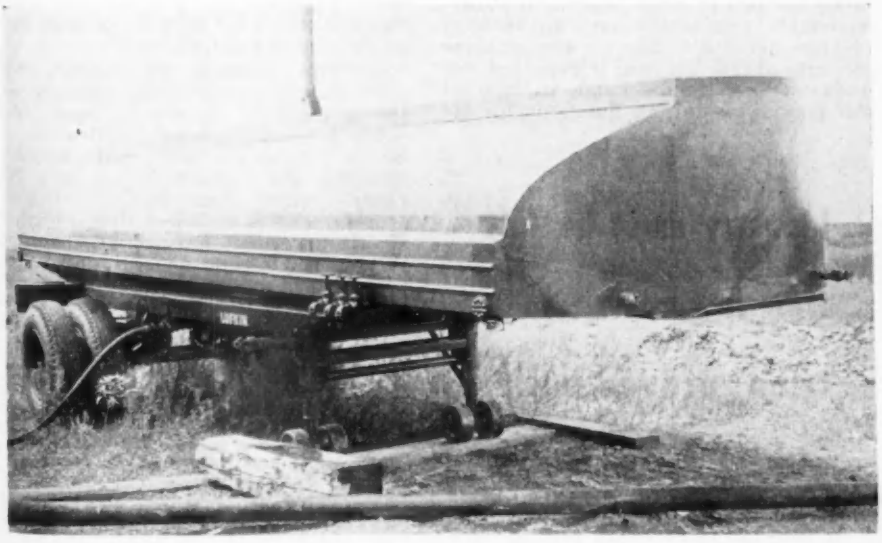


The derrick floor, substructure, rotary table and blowout preventer assembly comprise another unit. This unit is not mounted on wheels, but is carried on a truck. This unit, shown above, is not attached to the derrick unit, except by a drive shaft that operates the rotary table. This shaft has a universal joint on each end, and extends from a right angle gear box set beneath the intermediate shaft on the drawworks. Thus, the 250-horsepower drawworks motor operates both the rotary table and the drawworks.

The blowout preventer is set inside the substructure (see photograph at right). An ingenious arrangement makes the preventer convenient for easy rigging up and dismantling. It is mounted on rollers, one of which can be seen immediately to the left and rear of the drilling bit. The rollers run within the channels of I-beams which form the base of the sub-structure. While moving and setting surface pipe, the preventer is rolled out of the way. When the surface pipe is run, a collar is left just opposite the preventer. After cement has set, this collar is removed and the blowout preventer is then rolled over the hole and flanged up. When the well is completed the reverse of this procedure takes place. A mud jet, right side of photograph, is used to remove water from the small cellar.



Fuel Unit on Rowan Rig



The fuel unit also is mounted on wheels. The portable storage tank has a capacity of 2100 gallons of diesel oil. There also are four lubricating oil compartments of 100 gallons each. Although there is sufficient fuel capacity in the day tank on each engine to operate while the portable fuel storage tank is taken to a bulk plant for refilling, it was found more convenient to refill the tank by having a marketer's truck come to the rig site. Fuel from the tank is carried directly to the injection system of the engines through a two-inch connection on the bottom of the tank. This unit is mounted on one axle with dual wheels in the rear. A carriage which supports the front end is retracted when the unit is on the road.

Also included in this unit are four compartments of 100 gallons each for lubricating oils.

Oil for America's Future

By DR. ROBERT E. WILSON
Chairman of the Board,
Standard Oil Company (Indiana)

MUCH of the information presented to your Committee* during these hearings bears on the fundamental question of how to meet America's future requirements for petroleum. In this respect our country is unique. Although it includes only about 7 percent of the world's land area and 7 percent of the world's population, America has for many years been producing and using more than ⅔ of the world's petroleum and the world's motor vehicles, and consuming more than ½ of the world's rubber supply.

All three of these are a measure of our outstanding position as a nation on wheels, and of the essentiality of our need for a plentiful supply of quality petroleum products at reasonable prices. Our per capita consumption of oil is 30 times the average of the rest of the world. The energy content of this oil is equivalent to the work of 40 slaves for every individual in the United States—and it is in such convenient and concentrated form that no number of slaves—or of horses—could do what it does for the average American, particularly in the field of transportation.

War Record Outstanding

In spite of repeated and widely circulated "scare stories" during the last 25 years, predicting an imminent shortage of oil, the American petroleum industry, operating as a free and highly competitive industry, has never failed to meet all essential requirements. Even when confronted with the stupendous problem of meeting a military and essential civilian demand for petroleum products which reached a peak of about 5½ million barrels per day, and in spite of shortages of transportation, materials, and manpower and of crude prices fixed at levels below average replacement costs, the industry has done the job. To do so it increased its domestic production and refining by about 1,100,000 barrels per day as compared with 1941. Military and lend-lease demand increased about 1½ million barrels per day during the period and over-all civilian consumption had to be cut about 400,000 barrels per day. Widespread public objections to rationing, especially before the necessity became well understood, provide some measure of our nation's reliance on adequate petroleum supplies and emphasize the importance of their availability.

To aid in understanding the amazing magnitude of the petroleum industry's accomplishment in meeting war demands, consider these facts: America has supplied aviation gasoline at a daily rate *more than 100 times* as much as at the peak of World War I; and motor gasoline at nearly a 20-fold rate, yet this demand has been met with field crude prices and refinery gasoline prices roughly ½ what they were 25 years ago!

Long-Range Forecast Difficult

But so much for the past; your Committee is naturally more interested in the future. The proper period of forecast for presentation to this Committee has been the subject of considerable discussion by our industry Committee on Petroleum Requirements† Obviously we can be much more certain of the outlook for the next five or ten years than we can for the more distant future. On the other hand, we feel that we should attempt to forecast at least 20 years ahead, because policies to be established now should certainly take into account developments which seem likely to occur within a generation.

While the petroleum industry has supreme confidence in its ability to meet every demand for petroleum and its products for many, many years, it is understandably reluctant to try to forecast definite detailed figures for two or three decades ahead. Seldom, if ever, has our industry been bold enough to forecast for many years ahead the extent of expansion of either the demand for petroleum or the ability of the industry to supply that demand from domestic sources. The unfortunate experience of our sober and highly regarded U. S. Geological Survey makes any group reluctant to undertake projections except with many reservations. In 1918 the Survey estimated the total crude reserves underlying the country to be around 6½ billion barrels, and most contemporary geologists were inclined to concur. Actually, we have since that time produced 25 billion barrels and have today proven producible reserves of more than 20 billion barrels, a total already seven times that estimated by the Survey.

Industry must be left free to develop on a tried, proven basis, without regimentation

Industry Confident, Provided—

We approach our present forecasting problem in much the same spirit as a well-educated young man about to marry. He does not know for whom he will be working or how much he will earn or just what his financial requirements will be; but he has supreme confidence that, given his health, he will be able to make a good living and give adequate support and protection to his family, though at what precise level the balance will be struck he cannot predict. The only important "if" in his mind is the question of *continued health* and *freedom of opportunity*—and that is exactly the feeling of the petroleum industry as it looks into the future. Given a continuation of a legal and economic climate conducive to free competition in discovery, research, development, and distribution, the industry knows a dozen ways in which any possible demand can be met, even though it cannot predict just which of these methods will prove most efficient and economically desirable when the time comes.

Supply and Demand Outlook

The supply and demand picture already presented to you by Mr. Coleman and others *for the next 20 years* may be summarized as follows:

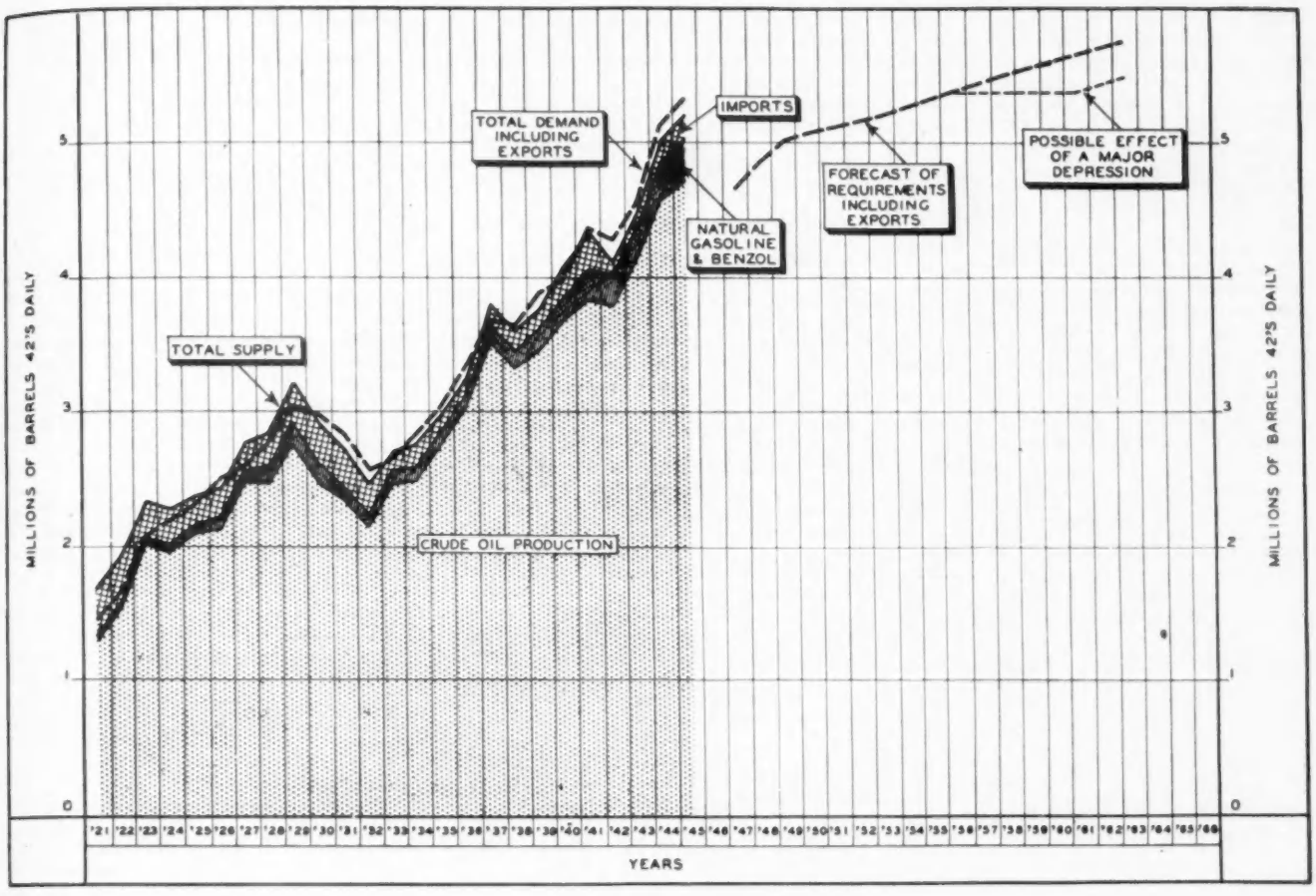
(1) The Eastern Hemisphere has more than adequate crude supplies for, and is logically located to supply, the entire Eastern Hemisphere demand so far as volume is concerned. Roughly speaking, the Eastern Hemisphere has slightly more than half the world's proven reserves with less than a quarter of the world's prospective demand. While products of unusual quality, as well as various specialties, probably will continue to be exported from the Western Hemisphere, after the next few years such exports will not be of substantial importance in striking a Western Hemisphere balance . . . indeed, the balance of flow may some day be in the other direction.

(2) If Eastern Hemisphere crude production does largely come to supply Eastern Hemisphere needs, which will most certainly be the general trend over

* Testimony presented October 3, 1945, before the special committee investigating petroleum resources, Senator Joseph C. O'Mahoney, chairman.

† Robert E. Wilson, chairman; Joseph E. Pogue, Chase National Bank; Stewart P. Coleman, Standard Oil Company (New Jersey); J. French Robinson, American Gas Association; H. J. Struth, Texas Mid-Continent Oil & Gas Association; James V. Brown, Independent Petroleum Association of America; E. Buddrus, Independent Natural Gas Association; Earl W. Wagy, Standard Oil Company of California; Fred Van Covern, American Petroleum Institute.

U. S. Supply and Demand of Crude Oil and Petroleum Products


TOTAL DEMAND INCLUDING EXPORTS
IMPORTS
POSSIBLE EFFECT OF A MAJOR DEPRESSION
FORECAST OF REQUIREMENTS INCLUDING EXPORTS
NATURAL GASOLINE & BENZOL
TOTAL SUPPLY
CRUDE OIL PRODUCTION
MILLIONS OF BARRELS 42'S DAILY
MILLIONS OF BARRELS 42'S DAILY
0
1
2
3
4
5
'21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40 '41 '42 '43 '44 '45 '46 '47 '48 '49 '50 '51 '52 '53 '54 '55 '56 '57 '58 '59 '60 '61 '62 '63 '64 '65 '66
YEARS

the coming years, there will be a large surplus of crude in South America available for shipment to the United States and Canada. Without this large South American production, shipped both to the United States and direct to the fighting fronts, the war demands could not possibly have been met.

(3) With the end of the war the total United States demand, especially for gasoline, will drop rather sharply from wartime levels. However, except for possible continuing strike difficulties in the oil, motor or tire industries, the postwar *gasoline* demand probably will pass its minimum by next spring and the *overall* demand by next summer with a 1946 average around 1 million barrels per day below the wartime peak. Thereafter, except for possible temporary slumps in the event of an economic depression, the trend of demand for petroleum products appears to be steadily upward, with particularly rapid gains during the first three years. However, unless military demand continues as a major factor for several years, total domestic demand probably will not exceed the wartime peak of domestic plus military export demand for about ten years. The postwar rate of increase in demand for gasoline and distillate fuels probably will be somewhat greater than the average, and that for heavy residual fuels somewhat less than the average for all products.

(4) The farther we look into the future, the harder it is to estimate accurately the demand for petroleum and its products. The projected demand curve presented in chart* above, instead of being a line, probably ought to be represented as developing into a widening band within which actual demand is likely to fall. Barring a major depression the domestic demand for the period 1961-65 appears likely to be about 750,000 barrels a day above the 1944 level of domestic plus export demand, or nearly 2 million barrels per day above 1939 levels.

Future Production

(5) The future rates of production of crude oil in the United States are difficult to predict with accuracy because they will depend on many variables, such as price, good or bad fortune in discovery, the development of new methods of finding oil, government policy regarding taxation and public lands, etc. In general, however, it appears that under favorable conditions for crude production the ability of our domestic industry to produce crude will probably for the next five years . . . and possibly for the next ten years . . . nearly equal the lower range of probable demand and will make possible a substantially self-contained domestic industry, if that should be deemed desirable. On the other hand, under a less favorable combination of conditions affecting domestic crude production, there will be an increasing gap between domestic production of crude petroleum and the domestic demand for petroleum products. It is conceivable (though in my opinion not probable) that, under a combination of high demand and low production, this gap between our domestic production and our domestic demand might exceed 1 million barrels per day during the last five years of the 20 years which we are considering.

Many Ways to Meet Demand

The question, to which I am sure the Committee wishes me to address myself, is: Assuming such a combination of circumstances, how will the industry meet this difference between a possible adverse domestic crude supply situation and a possible strong domestic demand amounting, as I have indicated, to as much as a million or more barrels per day by 1965? The only *definite* answer I can give is that *I do not know.* But I *do* know that there are many possible ways in which it *can* be met, assuming only the essential freedom and continued health of the petroleum industry. Which method or combination of methods will best meet the deficiency, if it actually appears, will depend upon changing economic conditions and quite probably on new discoveries and technologies of which we do not today even dream, any more than we dreamed 25 years ago that we could make gasoline from coal or natural gas at reasonable costs.

Free Prices Could Balance Supply and Demand

Before discussing the important technological factors, let us consider some of the more obvious possibilities. In the

* The demand estimates and this chart were prepared by the committee in June on the assumption that the war would end in 1946. In view of the earlier V-J date the whole curve could probably be moved one year to the left, but it seemed unnecessary to reconvene the committee or redraw the curve since my testimony is directed to the most distant future.

first place, if it were deemed important that a balance be achieved within this country between domestic supply and domestic demand, the automatic working of the price factor could readily remove the entire discrepancy if allowed to operate freely. Petroleum supply is, over a period of time, highly sensitive to price, because price has a strongly stimulating effect on exploration, wildcat drilling, the development of remote fields, and methods of secondary recovery. The combined effect of these and related factors over a period of a few years can make a tremendous difference in the amount of oil which this country can produce. In addition, any substantial increase in the price of products would have a depressing effect on consumption, especially if the prospect were for a continued, even though moderate, upward trend.

As an example of what would happen in almost every field of petroleum demand, consider the sharp increase in home insulation and other means of reducing fuel oil consumption which has taken place as the result of the wartime shortage of domestic heating oil. In my opinion, a majority of the homes which have burned fuel oil in the past will burn less oil postwar than prewar, because of improvements in home insulation, burner or boiler efficiency, and other factors tending to conserve heat; and such effects would become more prominent if there were to be any substantial increase in the price of heating oils. While the cleanliness, labor saving, and convenience of oil would prevent any substantial shifting back to coal, any large increase in price would undoubtedly tend to reduce new oil burner installations.

As to gasoline consumption, the immediate effect of an increasing price probably would not be great. Even with our present high gasoline taxes, the cost of gasoline is still only a small part of the cost of operating a car. Mainly for this reason, the much higher efficiency which the petroleum industry has built into its gasoline during the past 20 years has not been converted into much increased mileage per galon, but has gone to meet public demand for larger cars, flashier performance, and higher top speeds. However, the continuance for any considerable period of substantially higher gasoline prices would undoubtedly have its effect in bringing about more emphasis on economic performance of automobiles. Even without higher prices, the wider use of automatic gear shifts and the probable trend toward lighter and more streamlined cars will have a tendency to convert more of the increased gasoline efficiency into better future economy.

The effects which increasing price and improving technology are likely to have on the production and consumption of heavy fuel oil are complicated, but will serve as an interesting illustration of industry economics. The new processes for catalytic cracking, whose aggregate installed capacity has already reached 60 percent of our prewar thermal cracking capacity, characteristically produce more gasoline and distillate fuel, and much less heavy residual fuel oil, than does thermal cracking. These processes will be increasingly adopted as thermal cracking plants wear out, and since they give higher yields of the more valuable products their adoption would be stimulated by rising crude prices. Heavy fuel oil postwar will no longer be a major and inevitable by-product of petroleum refining, forced to find a market in close price competition with coal even in large installations. Its price is therefore likely to go up somewhat more rapidly than that of crude. On the other hand, even without larger imports, adequate supplies would undoubtedly be available for ships' bunkers and for moderate-sized installations where oil's efficiency, cleanliness, and labor saving are sufficient to justify a reasonable premium over coal.

But at What Price?

While we can be certain that rising prices *could* achieve a balance between domestic production and domestic demand for at least 20 years ahead, we cannot be certain just what price might be necessary to achieve this balance. If the cost of finding oil should increase anything like as rapidly over the next 20 years as it has during the last decade, the increase in price necessary to achieve such a balance might prove to be undesirably large and tend to penalize American industry, shipping, and individual consumers in comparison with the rest of the world. Also, too sharp a reduction in the peacetime production and consumption of heavy fuel oil also would be hazardous in view of the vital importance to the Navy of having large quantities of such fuel available in wartime. Again we note that the existence of a vigorous industry with widespread distribution operations is a military necessity.

It seems clear from the foregoing that while free prices could assure a balance of domestic supply and demand for at least a generation ahead, the price required to achieve such a balance might well prove excessive, and that other alternatives must be considered.

Imports Could Balance Demand

The second obvious way in which a balance can be achieved between supply and demand is, of course, by importation of sufficient crude and/or products to achieve such a balance. Since South America has been exporting to the United States and the Eastern Hemisphere during most of 1945 around 700,000 barrels per day on the average, and even then drawing on its reserves at a lower percentage rate than the United States has been, there should be no difficulty in importing enough crude, mainly or entirely from Western Hemisphere sources, to meet a possible 1960-65 deficiency of around 1 million barrels per day. Such partial reliance on sources outside the United States may appear unsafe in view of the possibility of another national emergency. During the early part of the present emergency there were many months when enemy submarine activity made it almost impossible to get oil from South America to the United States. On the other hand, if we have the wisdom to maintain our new Caribbean bases and an adequate Navy, there should be little possibility of any such future debacle. As a matter of fact, any reasonable plan for future national security must consider the protection of the Western Hemisphere as a whole, and of the lines of communication between North and South America, which are essential for so many of our raw materials.

Fortunately, for reasons previously pointed out, most of the imports needed to balance domestic demand and protect possible naval requirements are likely to consist of heavy fuel oil and heavy crudes, both of which are readily available in South America, and would have a minimum effect on the domestic crude market.

Sound Import Policy Essential

This last point puts a finger on the most serious problem in handling the question of importation. In view of the current low discovery costs, and the very high production per well characteristic of many foreign fields, heavy importation of crude at little or no duty could result in a price depression which would have disastrous results on our domestic producing industry and most of our domestic refining operations. If America is to be strong and ready to meet any emergency, we must keep exploration, wildcatting, and development of new fields, at a reasonably high level and must encourage the continued installation of new and better refining equipment in our domestic refineries. It is fortunate that we can, and proper that we should, use imports to make up the difference between domestic demand and our ability to produce at reasonable costs, but such action should not be carried to a point which will ever allow us to become mainly dependent on sources outside the country for our vitally essential supplies of liquid fuel. Furthermore, depressed prices due to unrestricted importation would discourage continued technological advances in the making of petroleum from natural gas, coal and oil shale, which are likely to be our principal ultimate sources of petroleum products.

To my mind the only sound answer to this difficult problem is an import policy which will permit the needs of industry and individual consumers to be met at reasonable prices, and yet not flood the market or keep prices at a level which would discourage an adequate amount of exploration, wildcatting, and secondary recovery activities in this country. I have shown the vital importance of a healthy domestic industry, and such activities are the best measure of its underlying health.

Developing the details of a sound import policy to accomplish these results will not be a simple task, but the general objectives are so clear that I believe the entire industry as well as the well-informed consumers can unite in agreeing to their desirability. The fact that the most probable imports from South America will consist of relatively heavy crude and fuel oil will tend to take care of our most probable shortages with a minimum of repercussion on the domestic industry.

Synthetic Gasoline From Gas

However, increases in price or increases in imports are by no means the only way in which a possible shortage could be met. We already know how to make gasoline from natural gas by the new Fischer or Synthol process at costs similar to present costs, and by devoting only 1/3 of the present proven reserves of natural gas to this type of operation and producing them at a rate of 4 percent of such reserves per annum, it would be possible to produce around 500,000 barrels per day of gasoline, or about 30 percent of our prewar gasoline consumption. Similar processes could alternatively produce high quality Diesel fuel and wax, and would yield large amounts of important chemicals as by-products.

Beyond the above possibilities, which

could, if desired, be put into large-scale operation within the next year, technologists have developed several other processes which can, if necessary, supply our liquid fuel needs for many generations to come. I do not believe these other processes will play any large role for the next few decades, but they are important, both as showing that the industry realizes the importance of maintaining a liquid fuel supply far into the future, and that it also has actually done something about it in the way of research and development.

After the last war, oil shale was the only major reserve to which we could look in the event of possible exhaustion of petroleum. During the past 25 years, however, technology has developed not only the above mentioned methods of making gasoline and Diesel fuel from natural gas, but also two processes for making gasoline and other liquid fuels from coal, of which our reserves are virtually inexhaustible.

The first process developed, that of hydrogenation, can be employed to make gasoline from low grade coals on a large scale at refinery cost 10 to 15 cents per gallon above present gasoline costs. It was Germany's mainstay during World War II until our air force really got to work on it.

The other process, the Fischer process as applied to coal, initially appeared to involve costs almost as high as those for hydrogenation, and suffered from the fact that it had to start with high-quality coking coal and produced gasoline of poor quality. Both of these drawbacks have been overcome as the result of research during recent years. Given just a few years of further research and development, this Fischer type of process can be operated on sub-bituminous coals and lignites, of which our domestic supplies are enormous, to produce good quality gasoline and Diesel fuel at costs not more than 5 or 6 cents per gallon above present costs! This possibility eliminates even a remote danger of petroleum shortage. The gasification step of this process can also make a high quality fuel gas as a substitute for natural gas.

Government Research Program

While technologists in Great Britain and Germany have already operated these processes on a commercial basis, considerable research remains to be done to make large-scale operations efficient and economical under American conditions and on American raw materials. Since the industry regards this as a very long-range alternative, it is not likely to spend the large sums required for large-scale pilot plants or semicommercial units. The Bureau of Mines program of research and development along these lines therefore seems to me to be sound, though the industry opinion on this point is divided. I do urge, however, that the building of semicommercial units should be postponed until much more research and pilot-plant work has been done. Large semicommercial units are very expensive and cumbersome to operate and quickly become obsolete as research continues. They should not be built until commercialization of the process appears reasonably imminent.

Oil Shales and Tar Sands

Still other possibilities for the long-range future are oil from oil shale, of which there are large deposits in the western states, and oil from tar sands, of which there are tremendous deposits in Canada. For supplying areas where transportation costs are favorable, both of these may come into use at about the same time the coal processes do, but both the location and the size of the coal and lignite deposits are such as to make them appear to be the most likely major sources of petroleum if and when crude petroleum becomes scarce.

Technology May Find Other Sources

While our coal deposits could supply us with abundant liquid fuel for more than a thousand years, it is quite possible that even before our petroleum deposits are exhausted, and certainly before we use up much of our coal, still other and cheaper sources of power will be developed. Our technologists have not lost their magic touch. They are hard at work in many fields and no man can tell what the next 25 years will bring forth.

Atomic Power

I am glad that this testimony was postponed from last July because I had been officially requested to omit even passing mention of atomic power as one of the technical possibilities for the future. While its practical application must be preceded by much expensive research and development, and the economics might never justify the building of new plants to make the raw materials for atomic power, it seems quite possible that the next decade may see commercial applications of power development in large units from raw materials made in our present plants, God granting that they be not needed for military purposes. In such large units the necessary control equipment and heavy protective devices to shield the operators from the various radiations could probably be installed without disproportionate cost. I do not believe there is a reasonable probability of atomic power ever being used to run automobiles, though no scientist would say such a thing was impossible, especially after noting the amazing achievements of science during the war.

In any case the possibility of atomic energy becoming an important source of power certainly cannot be disregarded. It is one more reason why we should not insist on a sharply limited use of existing resources when the rapid pace of technical development might conceivably make such resources less needed in the future than they are today.

Technology Our Real Reserve

To summarize, the one point I want to emphasize to this Committee is that our most important reserve does not consist of the number of barrels of oil that we can point to in the ground, but rather of research and technology supported by a healthy and vigorous industry. Technology is the indispensable finder, developer, and multiplier of our natural resources, and given a fair chance will accomplish even more in the future than it has in the past. The most essential element of national oil policy is to leave the industry free to develop on a tried and proven basis, and to shun the adoption of measures which would attempt to regiment research, destroy the incentives to invention, or prevent the free play of competitive enterprise .

IPAA Officer Sees No Oil Shortage, Asks Price Jump

Millions of acres of untested, potential oil lands in the United States undoubtedly will supply additional oil reserves and the public need not worry about a shortage of petroleum fuels, Harold B. Fell, vice president of the Independent Petroleum Association of America, told members of the Oklahoma City Geological Society recently that "the petroleum industry should not start worrying about folding up."

Among depressing factors Fell noted are a probable decrease in oil income due to an anticipated decrease in demand; money that has been plowed back into the industry because of excess profits tax will be shut off when the federal tax bill is amended, and money from outside the industry also will not be so plentiful as a result of tax changes

Scoring the propaganda which insists that this country may face an oil shortage, Fell asserted "the record of the petroleum industry during the war is definite proof of what the industry can do in an emergency and similar records can be attained in peacetime.

"Exploration follows the price trend. When the price of oil was high, drilling was at a peak and more wells were on production; when prices dropped drilling was curtailed and small wells were abandoned at a faster rate. Importation of foreign oil may have a depressing effect on the domestic price."

Michigan, Wyoming Maps Are Readied by U.S.G.S.

Possibilities for the discovery of facies traps in the nonmarine Jurassic rocks in the Wind River Basin in Central Wyoming were reported September 18 by the United States Geological Survey in releasing a map of the area in Preliminary Chart 13 of the Oil and Gas Investigations series.

A recently completed investigation of the stratigraphy of these beds also suggests that local thinning of the formation may be related to gentle folds of Lower Cretaceous age trending northwest in the Lost Soldier-Big Sand Draw area and in the Alcova-Lost Cabin area, and that these may in turn be related to present distribution of oil and gas accumulations in the nonmarine Jurassic and Lower Cretaceous formations, it was stated.

Copies of the chart may be had at 40 cents each from U.S.G.S. offices in Washington, Casper, Wyoming; Denver or Tulsa.

The Survey also has released Preliminary Map 38 covering the Dundee formation and the Rogers City limestone in the Michigan Basin, outlining the possibilities of finding new oil in parts of large areas in the northern and eastern parts of the Southern Peninsula of Michigan.

The Survey pointed out that more oil has been produced from these formations of Middle Devonian age than from rocks of any other age in Michigan.

Copies of the map may be had at 40 cents each from Washington or Lansing, Michigan.

Valuable New Tables on

Cement Slurry Formulas

Interesting and valuable new tables covering slurry formulas, "down the well" quantities of cement and drilling mud, have been compiled on all the commonly used pipe sizes by the Universal Atlas Cement Company and are presented herewith through the courtesy and with the permission of that company.

Capacity of the hole, capacity of pipe, hydrostatic pressures of fluids at various depths, annular space between casing and hole, annular space between tubing and casing, annular space between casings, displacement of pipe and formulas for cement slurry are presented herewith.

The tables presented herewith are only part of a new 16-page "shirt pocket" type booklet which will be published by the Universal Atlas Cement Company shortly and available on request from any office of the company. The tables are copyrighted.

HYDROSTATIC PRESSURES OF FLUIDS AT VARIOUS DEPTHS

(Pressure in Pounds per Square Inch)

Depth in Feet	Oil 7.41 Lb./Gal.	Water 8.33 Lb./Gal.	Drill Mud 9.0 Lb./Gal.	10.0 Lb./Gal.	11.0 Lb./Gal.	12.0 Lb./Gal.	13.0 Lb./Gal.	14.0 Lb./Gal.	Drill Mud or Cement Slurry 15.0 Lb./Gal.	15.5 Lb./Gal.	16.0 Lb./Gal.	16.5 Lb./Gal.	17.0 Lb./Gal.
1000	385	433	468	520	572	624	676	728	780	806	832	858	884
2000	770	866	936	1040	1144	1248	1352	1456	1560	1612	1664	1716	1768
3000	1155	1299	1404	1560	1716	1872	2028	2184	2340	2418	2496	2574	2652
4000	1540	1732	1872	2080	2288	2496	2704	2912	3120	3224	3328	3432	3536
5000	1925	2165	2340	2600	2860	3120	3380	3640	3900	4030	4160	4290	4420
6000	2310	2598	2808	3120	3432	3744	4056	4368	4680	4836	4992	5148	5304
7000	2695	3031	3276	3640	4004	4368	4732	5096	5460	5642	5824	6006	6188
8000	3080	3464	3744	4160	4576	4992	5408	5824	6240	6448	6656	6864	7072
9000	3465	3897	4212	4680	5148	5616	6084	6552	7020	7254	7488	7722	7956
10000	3850	4330	4680	5200	5720	6240	6760	7280	7800	8060	8320	8580	8840
11000	4235	4763	5148	5720	6292	6864	7436	8008	8580	8866	9152	9438	9724
12000	4620	5196	5616	6240	6864	7488	8112	8736	9360	9672	9984	10296	10608
13000	5005	5629	6084	6760	7436	8112	8788	9464	10140	10478	10816	11154	11492
14000	5390	6062	6552	7280	8008	8736	9464	10192	10920	11284	11648	12012	12376
15000	5775	6495	7020	7800	8580	9360	10140	10920	11700	12090	12480	12870	13260
16000	6160	6928	7488	8320	9152	9984	10816	11648	12480	12896	13312	13728	14144
17000	6545	7361	7956	8840	9724	10608	11492	12376	13260	13702	14144	14586	15028
18000	6930	7794	8424	9360	10296	11232	12168	13104	14040	14508	14976	15444	15912
19000	7315	8227	8892	9880	10868	11856	12844	13832	14820	15314	15808	16302	16796
20000	7700	8660	9360	10400	11440	12480	13520	14560	15600	16120	16640	17160	17680

CAPACITY OF HOLE

(NOTE: On account of cavings, washouts and other well-bore irregularities, actual values usually considerably exceed the theoretical values shown below.)

Diameter of Hole (Inches)	Capacity per 100 Lin. Ft. Cu. Ft.	Barrels (42 Gal.)	Sacks Cement per 100 Lin. Ft. 15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
3	4.91	0.87	3.8	4.1	4.4	4.6
3½	6.68	1.19	5.2	5.6	6.0	6.4
4	8.73	1.55	6.7	7.25	7.8	8.3
4½	11.0	1.97	8.5	9.2	9.8	10.5
5	13.6	2.43	10.5	11.3	12.1	13.0
5½	16.5	2.94	12.8	13.75	14.7	15.7
6	19.6	3.50	15.2	16.3	17.5	18.7
6½	23.0	4.10	17.8	19.2	20.5	21.9
7	26.7	4.76	20.7	22.25	23.8	25.4
7½	30.7	5.46	23.8	25.6	27.4	29.2
8	34.9	6.22	27.1	29.1	31.2	33.2
8½	39.4	7.02	30.5	32.8	35.2	37.5
9	44.2	7.87	34.3	36.8	39.5	42.1
9½	49.2	8.77	38.1	41.0	43.9	46.8
10	54.5	9.71	42.2	45.4	48.6	51.9
10½	60.1	10.7	46.6	50.1	53.6	57.2
11	66.0	11.7	51.2	55.0	59.0	62.8
11½	72.1	12.8	55.9	60.1	64.4	68.6
12	78.5	14.0	60.8	65.4	70.1	74.8
12½	85.2	15.2	66.0	71.0	76.0	81.2
13	92.2	16.4	71.4	76.8	82.3	87.9
13½	99.4	17.7	77.0	82.8	88.7	94.6
14	106.9	19.0	82.8	89.0	95.5	101.8
14½	114.7	20.4	88.8	95.6	102	109
15	122.7	21.7	95.1	102	110	117
15½	131.0	23.3	102	109	117	125
16	139.6	24.9	108	116	125	133
16½	148.5	26.4	115	124	133	141
17	157.6	28.1	122	131	141	150
17½	167.0	29.7	129	139	149	159
18	176.7	31.5	137	147	158	168
18½	186.7	33.2	145	156	167	178
19	196.9	35.1	153	164	176	188
19½	207.4	36.9	161	173	185	197
20	218.2	38.9	169	182	195	208
20½	229.2	40.8	178	191	205	218
21	240.5	42.8	186	200	215	229
21½	252.1	44.9	195	210	225	240

CAPACITY OF PIPE

Size	I.D. (Ins.)	Weight Per Ft. Nominal (Lb.)	Capacity per 100 Lin. Ft. Cu. Ft.	Barrels (42 Gal.)	Sacks Cement per 100 Lin. Ft. 15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
Nominal			TUBING					
2	1.995	4.60	2.17	0.39	1.7	1.8	1.9	2.1
2-1/2	2.441	6.40	3.25	0.58	2.5	2.7	2.9	3.1
3	2.992	9.20	4.88	0.87	3.8	4.1	4.4	4.6
			DRILL PIPE					
			(No allowance made for internal upsets and tool joints.)					
O.D.								
2-7/8	2.151	10.40	2.53	0.45	2.0	2.1	2.3	2.4
3-1/2	2.764	13.30	4.17	0.74	3.2	3.5	3.7	4.0
4-1/2	4.000	12.75	8.73	1.55	6.8	7.3	7.8	8.3
4-1/2	3.958	13.75	8.55	1.52	6.6	7.1	7.6	8.1
4-1/2	3.826	16.60	7.98	1.42	6.2	6.7	7.1	7.6
4-1/2	3.754	18.10	7.68	1.37	6.0	6.4	6.9	7.3
5-9/16	4.859	22.20	12.88	2.29	10.0	10.8	11.5	12.3
O.D.			CASING					
4-1/2	4.090	9.50	9.12	1.62	7.1	7.6	8.1	8.7
5	4.494	13.00	11.0	1.96	8.5	9.2	9.8	10.5
5	4.408	15.00	10.6	1.89	8.2	8.8	9.5	10.1
5-1/2	5.012	14.00	13.7	2.44	10.6	11.4	12.2	13.0
5-1/2	4.950	15.50	13.4	2.39	10.4	11.2	12.0	12.8
5-1/2	4.892	17.00	13.1	2.33	10.2	10.9	11.7	12.5
5-1/2	4.778	20.00	12.5	2.23	9.7	10.4	11.2	11.9
6	5.424	18.00	16.1	2.87	12.5	13.4	14.4	15.3
6-5/8	5.921	24.00	19.1	3.41	14.8	15.9	17.1	18.2
7	6.538	17.00	23.3	4.15	18.1	19.4	20.8	22.2
7	6.456	20.00	22.7	4.05	17.6	18.9	20.3	21.6
7	6.366	23.00	22.1	3.94	17.1	18.4	19.7	21.1
7	6.276	26.00	21.5	3.83	16.7	17.9	19.2	20.5
7-5/8	6.969	26.40	26.5	4.72	20.5	22.1	23.7	25.2
8-5/8	8.097	24.00	35.8	6.38	27.7	29.8	32.0	34.1
8-5/8	8.017	28.00	35.1	6.24	27.2	29.2	31.3	33.4
8-5/8	7.921	32.00	34.2	6.10	26.5	28.5	30.5	32.6
9-5/8	8.921	36.00	43.4	7.73	33.6	36.2	38.7	41.3
10-3/4	10.192	32.75	56.7	10.1	44.0	47.2	50.6	54.0
10-3/4	10.050	40.50	55.1	9.81	42.7	45.9	49.2	52.5
13-3/8	12.715	48.00	88.2	15.7	68.4	73.5	78.7	84.0
13-3/8	12.615	54.50	86.8	15.5	67.3	72.3	77.5	82.6
16	15.250	65.00	126.8	22.6	98.2	105.7	113.2	120.8

ANNULAR SPACE BETWEEN CASING AND HOLE

(No allowance made for casing couplings.)

(No allowance made for cavings, washouts and other well-bore irregularities. Because of these, actual values usually considerably exceed the theoretical values shown below.)

Casing Size O.D.	Hole Diameter (Inches)	Annular Space per 100 Lin. Ft.		Sacks Cement per 100 Lin. Ft.			
		Cu. Ft.	Barrels (42 Gal.)	15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
4½"	5½	5.46	0.97	4.2	4.6	4.9	5.2
	6	8.59	1.53	6.7	7.2	7.7	8.2
	6½	12.0	2.14	9.3	10.0	10.7	11.4
	7	15.7	2.79	12.2	13.1	14.0	15.0
	7½	19.6	3.50	15.2	16.3	17.5	18.7
5"	6	5.99	1.07	4.6	5.0	5.4	5.7
	6½	9.40	1.68	7.3	7.8	8.4	9.0
	7	13.1	2.33	10.15	10.9	11.7	12.5
	7½	17.0	3.04	13.2	14.2	15.2	16.2
	8	21.3	3.79	16.5	17.7	19.0	20.3
5½"	6½	6.54	1.17	5.1	5.5	5.8	6.2
	7	10.2	1.82	7.9	8.5	9.1	9.7
	7½	14.2	2.53	11.0	11.8	12.7	13.5
	8	18.4	3.28	14.3	15.3	16.4	17.5
	8½	22.9	4.08	17.75	19.1	20.4	21.8
6"	7	7.10	1.26	5.5	5.9	6.3	6.8
	7½	11.1	1.97	8.6	9.2	9.9	10.6
	8	15.3	2.72	11.9	12.7	13.7	14.6
	8½	19.8	3.52	15.3	16.5	17.7	18.9
	9	24.6	4.37	19.1	20.5	22.0	23.4
	9½	29.6	5.27	22.9	24.7	26.4	28.2
6⅝"	7½	6.74	1.20	5.2	5.6	6.0	6.4
	8	11.0	1.95	8.5	9.2	9.8	10.5
	8½	15.5	2.75	12.0	12.9	13.8	14.8
	9	20.2	3.60	15.7	16.8	18.0	19.2
	9½	25.3	4.50	19.6	21.1	22.6	24.1
	10	30.6	5.45	23.8	25.5	27.3	29.1
7"	8	8.18	1.46	6.3	6.8	7.3	7.8
	8½	12.7	2.26	9.8	10.6	11.3	12.1
	9	17.5	3.11	13.6	14.6	15.6	16.7
	9½	22.5	4.01	17.45	18.8	20.1	21.4
	10	27.8	4.95	21.5	23.2	24.8	26.5
	10½	33.4	5.95	25.9	27.8	29.8	31.8
	11	39.3	6.99	30.5	32.7	35.1	37.4
7⅝"	8½	7.71	1.37	6.0	6.4	6.9	7.3
	9	12.5	2.22	9.7	10.4	11.2	11.9
	9½	17.5	3.12	13.6	14.6	15.6	16.7
	10	22.8	4.07	17.7	19.0	20.4	21.7
	10½	28.4	5.06	22.0	23.7	25.4	27.0
	11	34.3	6.11	26.6	28.6	30.6	32.7
	11½	40.4	7.20	31.3	33.7	36.1	38.5
8⅝"	9½	8.65	1.54	6.7	7.2	7.7	8.2
	10	14.0	2.49	10.8	11.7	12.5	13.3
	10½	19.6	3.48	15.2	16.3	17.5	18.7
	11	25.4	4.53	19.7	21.2	22.7	24.2
	11½	31.6	5.62	24.5	26.3	28.2	30.1
	12	38.0	6.76	29.4	31.7	33.9	36.2
	12½	44.7	7.95	34.6	37.3	39.9	42.6
9⅝"	10½	9.61	1.71	7.4	8.0	8.6	9.1
	11	15.5	2.75	12.0	12.9	13.8	14.8
	11½	21.6	3.85	16.7	18.0	19.3	20.6
	12	28.0	4.99	21.7	23.3	25.0	26.7
	12½	34.7	6.18	26.9	28.9	31.0	33.1
	13	41.6	7.42	32.2	34.7	37.1	39.6
	13½	48.9	8.71	37.9	40.8	43.6	46.6
	14	56.4	10.0	43.7	47.0	50.4	53.7
10¾"	11½	9.11	1.62	7.1	7.6	8.1	8.7
	12	15.5	2.76	12.0	12.9	13.8	14.8
	12½	22.2	3.95	17.2	18.5	19.8	21.1
	13	29.1	5.19	22.6	24.3	26.0	27.7
	13½	36.4	6.48	28.2	30.3	32.5	34.7
	14	43.9	7.81	34.0	36.6	39.2	41.8
	14½	51.6	9.20	40.0	43.0	46.1	49.2
	15	59.7	10.6	46.2	49.8	53.3	56.9
13⅜"	14½	17.1	3.05	13.2	14.3	15.3	16.3
	15	25.2	4.48	19.5	21.0	22.5	24.0
	15½	33.5	5.96	26.0	27.9	29.9	31.9
	16	42.1	7.49	32.6	35.1	37.6	40.1
	16½	50.9	9.07	39.4	42.4	45.4	48.5
	17	60.1	10.7	46.6	50.1	53.6	57.2
	17½	69.5	12.4	53.9	57.9	62.1	66.2
	18	79.1	14.1	61.3	66.0	70.7	75.4
16"	17	18.0	3.21	13.9	15.0	16.1	17.1
	17½	27.4	4.88	21.2	22.8	24.5	26.1
	18	37.1	6.61	28.8	30.9	33.1	35.3
	18½	47.0	8.38	36.4	39.2	42.0	44.8
	19	57.3	10.2	44.4	47.8	51.2	54.6
	19½	67.8	12.1	52.5	56.5	60.5	64.6
	20	78.5	14.0	60.8	65.4	70.1	74.8
	20½	89.6	16.0	69.5	74.7	80.0	85.4

ANNULAR SPACE BETWEEN TUBING AND CASING

(NOTE: No allowance made for tubing external upsets and couplings.)

Inside Tubing	Outside Casing			Annular Space Per 100 Lin. Ft.		Sacks Cement Per 100 Lin. Ft.			
	Size O.D. (Ins.)	I.D. (Ins.)	Weight Per Ft. (Lb.)	Cu. Ft.	Barrels (42 Gal.)	15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
Nominal 2" O.D. 2-3/8"	4-1/2	4.090	9.50	6.04	1.08	4.7	5.0	5.4	5.8
	5	4.494	13.00	7.94	1.41	6.1	6.6	7.1	7.6
	5	4.408	15.00	7.52	1.34	5.8	6.3	6.7	7.1
	5-1 2	5.012	14.00	10.6	1.89	8.1	8.8	9.5	10.1
	5-1 2	4.950	15.50	10.3	1.83	8.0	8.6	9.2	9.8
	5-1/2	4.892	17.00	9.97	1.78	7.7	8.3	8.9	9.5
	5-1/2	4.778	20.00	9.37	1.67	7.3	7.8	8.4	8.9
	6	5.424	18.00	13.0	2.31	10.1	10.8	11.6	12.4
	6-5/8	5.921	24.00	16.1	2.86	12.5	13.4	14.4	15.3
	7	6.538	17.00	20.5	3.64	15.9	17.1	18.3	19.5
	7	6.456	20.00	19.7	3.50	15.3	16.4	17.6	18.8
	7	6.366	23.00	19.0	3.39	14.7	15.8	17.0	18.1
	7	6.276	26.00	18.4	3.28	14.3	15.3	16.4	17.5
	7-5/8	6.969	26.40	23.4	4.17	18.1	19.5	20.9	22.3
	8-5/8	8.097	24.00	32.6	5.82	25.2	27.2	29.1	31.0
	8-5/8	8.017	28.00	32.0	5.70	24.8	26.7	28.6	30.5
	8-5/8	7.921	32.00	31.1	5.55	24.1	25.9	27.8	29.6
	9-5/8	8.921	36.00	40.3	7.18	31.2	33.6	36.0	38.4
	10-3/4	10.192	32.75	53.6	9.53	41.5	44.6	47.8	51.0
	10-3/4	10.050	40.50	52.0	9.26	40.3	43.3	46.4	49.5
Nominal 2½" O.D. 2-7/8"	4-1/2	4.090	9.50	4.61	0.82	3.6	3.8	4.1	4.4
	5	4.494	13.00	6.51	1.16	5.1	5.4	5.8	6.2
	5	4.408	15.00	6.08	1.08	4.7	5.1	5.5	5.8
	5-1/2	5.012	14.00	9.19	1.64	7.1	7.7	8.2	8.7
	5-1/2	4.950	15.50	8.86	1.58	6.9	7.4	7.9	8.4
	5-1/2	4.892	17.00	8.54	1.52	6.7	7.1	7.6	8.1
	5-1/2	4.778	20.00	7.94	1.41	6.2	6.6	7.1	7.6
	6	5.424	18.00	11.53	2.05	8.9	9.6	10.3	11.0
	6-5/8	5.921	24.00	14.6	2.60	11.3	12.2	13.0	13.9
	7	6.538	17.00	18.8	3.35	14.6	15.7	16.8	17.9
	7	6.456	20.00	18.2	3.25	14.1	15.2	16.2	17.3
	7	6.366	23.00	17.6	3.13	13.7	14.7	15.7	16.8
	7	6.276	26.00	17.0	3.02	13.2	14.2	15.2	16.2
	7-5/8	6.969	26.40	22.0	3.92	17.1	18.3	19.6	21.0
	8-5/8	8.097	24.00	31.2	5.56	24.2	26.0	27.8	29.7
	8-5/8	8.017	28.00	30.5	5.44	23.6	25.4	27.2	29.0
	8-5/8	7.921	32.00	29.7	5.29	23.0	24.7	26.5	28.3
	9-5/8	8.921	36.00	38.9	6.93	30.2	32.4	34.7	37.0
	10-3/4	10.192	32.75	52.2	9.29	40.5	43.5	46.6	49.7
	10-3/4	10.050	40.50	50.6	9.01	39.2	42.2	45.2	48.2
Nominal 3" O.D. 3-1/2"	5	4.494	13.00	4.34	0.78	3.4	3.6	3.9	4.1
	5	4.408	15.00	3.92	0.70	3.0	3.3	3.5	3.7
	5-1/2	5.012	14.00	7.02	1.25	5.4	5.8	6.3	6.7
	5-1/2	4.950	15.50	6.68	1.19	5.2	5.6	6.0	6.4
	5-1/2	4.892	17.00	6.37	1.13	4.9	5.3	5.7	6.1
	5-1/2	4.778	20.00	5.77	1.03	4.5	4.8	5.2	5.5
	6	5.424	18.00	9.36	1.67	7.3	7.8	8.4	8.9
	6-5/8	5.921	24.00	12.4	2.22	9.6	10.3	11.1	11.8
	7	6.538	17.00	16.6	2.96	12.9	13.8	14.8	15.8
	7	6.456	20.00	16.1	2.86	12.5	13.4	14.4	15.3
	7	6.366	23.00	15.4	2.74	11.9	12.8	13.75	14.7
	7	6.276	26.00	14.8	2.64	11.5	12.3	13.2	14.1
	7-5/8	6.969	26.40	19.8	3.53	15.4	16.5	17.7	18.9
	8-5/8	8.097	24.00	29.1	5.18	22.6	24.3	26.0	27.7
	8-5/8	8.017	28.00	28.4	5.05	22.0	23.7	25.4	27.0
	8-5/8	7.921	32.00	27.5	4.91	21.3	22.9	24.6	26.2
	9-5/8	8.921	36.00	36.7	6.54	28.4	30.6	32.8	35.0
	10-3/4	10.192	32.75	50.0	8.91	38.8	41.6	44.6	47.6
	10-3/4	10.050	40.50	48.4	8.62	37.5	40.4	43.2	46.1

CEMENT SLURRY DATA

(Based on sp. gr. of cement of 3.17)

Density of Slurry			Water Required			Volume of Slurry per Sack Cement	
Lb. per Gallon	Lb. per Cu. Ft.	Specific Gravity	% by Weight of Cement	Gal. per Sack Cement	Bbl. (42 gal.) per Sack Cement	Cu. Ft.	Bbl. (42 Gal.)
13.5	101.0	1.62	79.0	8.92	0.212	1.67	0.297
14.0	104.7	1.68	69.3	7.83	0.186	1.52	0.271
14.5	108.5	1.74	61.0	6.89	0.164	1.39	0.248
15.0	112.2	1.80	54.1	6.11	0.145	1.29	0.230
15.5	115.9	1.86	48.2	5.44	0.130	1.20	0.214
16.0	119.7	1.92	43.0	4.86	0.116	1.12	0.199
16.5	123.4	1.98	38.4	4.34	0.103	1.05	0.187
17.0	127.2	2.04	34.3	3.88	0.092	0.99	0.176
17.5	130.9	2.10	30.7	3.47	0.083	0.94	0.167

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ANNULAR SPACE BETWEEN CASINGS

(NOTE: No allowance made for couplings of inside casing.)

Inside Casing	Outside Casing			Annular Space Per 100 Lin. Ft.		Sacks Cement Per 100 Lin. Ft.			
Size O.D.	Size O.D. (Ins.)	I.D. (Ins.)	Weight Per Ft. (Lb.)	Cu. Ft.	Barrels (42 Gal.)	15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
4½"	6	5.424	18.00	5.00	0.89	3.9	4.2	4.5	4.8
	6-5/8	5.921	24.00	8.10	1.44	6.3	6.7	7.2	7.7
	7	6.538	17.00	12.3	2.19	9.5	10.2	11.0	11.7
	7	6.456	20.00	11.7	2.08	9.2	9.7	10.4	11.1
	7	6.366	23.00	11.1	1.97	8.6	9.2	9.9	10.5
	7	6.276	26.00	10.4	1.86	8.1	8.7	9.3	9.9
	7-5/8	6.969	26.40	15.4	2.75	11.9	12.8	13.8	14.7
	8-5/8	8.097	24.00	24.7	4.40	19.1	20.6	22.1	23.6
	8-5/8	8.017	28.00	24.0	4.28	18.6	20.0	21.4	22.9
	8-5/8	7.921	32.00	23.2	4.13	18.0	19.3	20.7	22.1
5"	6-5/8	5.921	24.00	5.49	0.98	4.3	4.6	4.9	5.2
	7	6.538	17.00	9.68	1.72	7.5	8.1	8.6	9.2
	7	6.456	20.00	9.10	1.62	7.1	7.6	8.1	8.7
	7	6.366	23.00	8.47	1.51	6.6	7.1	7.6	8.1
	7	6.276	26.00	7.84	1.40	6.1	6.5	7.0	7.5
	7-5/8	6.969	26.40	12.8	2.29	9.9	10.7	11.5	12.3
	8-5/8	8.097	24.00	22.1	3.94	17.1	18.4	19.7	21.0
	8-5/8	8.017	28.00	21.4	3.82	16.6	17.8	19.1	20.4
	8-5/8	7.921	32.00	20.6	3.67	16.0	17.2	18.4	19.6
5½"	6-5/8	5.921	24.00	2.62	0.47	2.0	2.2	2.3	2.5
	7	6.538	17.00	6.82	1.21	5.3	5.7	6.1	6.5
	7	6.456	20.00	6.23	1.11	4.8	5.2	5.6	5.9
	7	6.366	23.00	5.61	1.00	4.4	4.7	5.0	5.3
	7	6.276	26.00	4.99	0.89	3.9	4.2	4.5	4.8
	7-5/8	6.969	26.40	9.99	1.78	7.7	8.3	8.9	9.5
	8-5/8	8.097	24.00	19.3	3.43	15.0	16.0	17.2	18.3
	8-5/8	8.017	28.00	18.6	3.31	14.4	15.4	16.6	17.7
	8-5/8	7.921	32.00	17.7	3.16	13.7	14.8	15.8	16.8
6"	7	6.538	17.00	3.69	0.65	2.9	3.1	3.3	3.5
	7	6.456	20.00	3.10	0.55	2.4	2.6	2.8	3.0
	7	6.366	23.00	2.47	0.44	1.9	2.1	2.2	2.4
	7	6.276	26.00	1.85	0.33	1.4	1.5	1.6	1.8
	7-5/8	6.969	26.40	6.86	1.22	5.3	5.7	6.1	6.5
	8-5/8	8.097	24.00	16.1	2.87	12.5	13.4	14.4	15.4
	8-5/8	8.017	28.00	15.4	2.75	11.9	12.8	13.8	14.7
	8-5/8	7.921	32.00	14.6	2.60	11.3	12.2	13.0	13.9
	9-5/8	8.921	36.00	23.8	4.23	18.5	19.8	21.2	22.7
6⅝"	8-5/8	8.097	24.00	11.8	2.10	9.1	9.8	10.5	11.2
	8-5/8	8.017	28.00	11.1	1.98	8.6	9.3	9.9	10.6
	8-5/8	7.921	32.00	10.3	1.83	8.0	8.6	9.2	9.8
	9-5/8	8.921	36.00	19.5	3.47	15.1	16.2	17.4	18.6
	10-3/4	10.192	32.75	32.7	5.82	25.4	27.2	29.2	31.1
	10-3/4	10.050	40.50	31.1	5.55	24.1	25.9	27.8	29.7
7"	8-5/8	8.097	24.00	9.03	1.61	7.0	7.5	8.1	8.6
	8-5/8	8.017	28.00	8.33	1.48	6.5	6.9	7.4	7.9
	8-5/8	7.921	32.00	7.50	1.34	5.8	6.3	6.7	7.1
	9-5/8	8.921	36.00	16.7	2.97	13.0	13.9	14.9	15.9
	10-3/4	10.192	32.75	29.9	5.33	23.2	24.9	26.7	28.5
	10-3/4	10.050	40.50	28.4	5.05	22.0	23.6	25.3	27.0
7⅝"	9-5/8	8.921	36.00	11.7	2.08	9.1	9.8	10.4	11.1
	10-3/4	10.192	32.75	24.9	4.44	19.3	20.8	22.3	23.8
	10-3/4	10.050	40.50	23.4	4.16	18.1	19.5	20.9	22.3
	13-3/8	12.715	48.00	56.5	10.06	43.8	47.0	50.4	53.8
	13-3/8	12.615	54.50	55.1	9.82	42.7	45.9	49.2	52.5
8⅝"	9-5/8	8.921	36.00	2.84	0.50	2.2	2.4	2.5	2.7
	10-3/4	10.192	32.75	16.1	2.87	12.5	13.4	14.4	15.3
	10-3/4	10.050	40.50	14.5	2.59	11.2	12.1	13.0	13.8
	13-3/8	12.715	48.00	47.6	8.48	36.9	39.7	42.5	45.4
	13-3/8	12.615	54.50	46.2	8.23	35.8	38.5	41.3	44.0
9⅝"	10-3/4	10.192	32.75	6.13	1.09	4.8	5.1	5.5	5.8
	10-3/4	10.050	40.50	4.56	0.81	3.5	3.8	4.1	4.3
	13-3/8	12.715	48.00	37.6	6.71	29.2	31.4	33.6	35.9
	13-3/8	12.615	54.50	36.3	6.46	28.2	30.3	32.4	34.6
	16	15.250	65.00	76.3	13.6	59.1	63.6	68.2	72.7
10¾"	13-3/8	12.715	48.00	25.2	4.48	19.5	21.0	22.5	24.0
	13-3/8	12.615	54.50	23.8	4.23	18.4	19.8	21.2	22.7
	16	15.250	65.00	63.8	11.37	49.5	53.2	57.0	60.8
13⅜"	16	15.250	65.00	29.3	5.21	22.7	24.4	26.2	27.9

AGA Meeting Set

The American Gas Association's annual meeting will be held October 24-25 at the Engineering Societies Building, 29 West 39th Street, New York City.

Governor Clarence Meadows of West Virginia will speak on "Gas and Modern Living." Ralph W. Gallagher, chairman of the board, Standard Oil Company of New Jersey, will speak on "The Industry and the War." J. French Robinson, president of the association, will review the record of the association in the past year and will outline the gas industry's program for meeting postwar problems.

DISPLACEMENT OF PIPE

(Displacement is amount of space taken up by metal in string of pipe.)

Size	O.D. (Ins.)	I.D. (Ins.)	Weight Per Ft. Complete (Lb.)	Displacement Per 100 Lin. Ft. Cu. Ft.	Displacement Per 100 Lin. Ft. Barrels (42 Gal.)	Sacks Cement Per 100 Lin. Ft. 15.0 Lb. Slurry	15.5 Lb. Slurry	16.0 Lb. Slurry	16.5 Lb. Slurry
TUBING (No allowance made for external upsets and couplings)									
Nominal									
2	2.375	1.995	4.60	0.91	0.16	0.7	0.8	0.8	0.9
2-1/2	2.875	2.441	6.40	1.26	0.22	1.0	1.1	1.1	1.2
3	3.500	2.992	9.20	1.80	0.32	1.4	1.5	1.6	1.7
DRILL PIPE (No allowance made for internal upsets and couplings)									
O.D.									
2-7/8	2.875	2.151	10.40	1.99	0.35	1.5	1.7	1.8	1.9
3-1/2	3.500	2.764	13.30	2.51	0.45	1.9	2.1	2.2	2.4
4-1/2	4.500	4.000	12.75	2.32	0.41	1.8	1.9	2.1	2.2
4-1/2	4.500	3.958	13.75	2.50	0.45	1.9	2.1	2.2	2.4
4-1/2	4.500	3.826	16.60	3.06	0.55	2.4	2.6	2.7	2.9
4-1/2	4.500	3.754	18.10	3.36	0.60	2.6	2.8	3.0	3.2
5-9/16	5.563	4.859	22.20	4.00	0.71	3.1	3.3	3.6	3.8
CASING (No allowance made for couplings)									
O.D.									
4-1/2	4.500	4.090	9.50	1.92	0.34	1.5	1.6	1.7	1.8
5	5.000	4.494	13.00	2.62	0.47	2.0	2.2	2.3	2.5
5	5.000	4.408	15.00	3.04	0.54	2.4	2.5	2.7	2.9
5-1/2	5.500	5.012	14.00	2.80	0.50	2.2	2.3	2.5	2.7
5-1/2	5.500	4.950	15.50	3.14	0.56	2.4	2.6	2.8	3.0
5-1/2	5.500	4.892	17.00	3.45	0.61	2.7	2.9	3.1	3.3
5-1/2	5.500	4.778	20.00	4.05	0.72	3.1	3.4	3.6	3.9
6	6.000	5.424	18.00	3.59	0.64	2.8	3.0	3.2	3.4
6-5 8	6.625	5.921	24.00	4.82	1.08	3.7	4.0	4.3	4.6
7	7.000	6.538	17.00	3.41	0.61	2.6	2.8	3.1	3.3
7	7.000	6.456	20.00	3.99	0.71	3.1	3.3	3.6	3.8
7	7.000	6.366	23.00	4.62	0.82	3.6	3.9	4.1	4.4
7	7.000	6.276	26.00	5.24	0.93	4.1	4.4	4.7	5.0
7-5/8	7.625	6.969	26.40	5.22	0.93	4.0	4.4	4.7	5.0
8-5/8	8.625	8.097	24.00	4.82	0.86	3.7	4.0	4.3	4.6
8-5/8	8.625	8.017	28.00	5.52	0.98	4.3	4.6	4.9	5.3
8-5/8	8.625	7.921	32.00	6.35	1.13	4.9	5.3	5.7	6.1
9-5/8	9.625	8.921	36.00	7.12	1.27	5.5	5.9	6.4	6.8
10-3/4	10.750	10.192	32.75	6.37	1.14	4.9	5.3	5.7	6.1
10-3/4	10.750	10.050	40.50	7.94	1.41	6.1	6.6	7.1	7.6
13-3/8	13.375	12.715	48.00	9.39	1.67	7.3	7.8	8.4	9.0
13-3/8	13.375	12.615	54.50	10.8	1.92	8.4	9.0	9.6	10.3
16	16.000	15.250	65.00	12.8	2.28	10.0	10.6	11.4	12.2

FORMULAS

1. *Cement Slurry Proportioning:*

Gal. water per sack cement = Lb. water per 100 Lb. cement × 0.113

Cu. Ft. of water per sack cement = Lb. water per 100 Lb. cement × 0.015

Slurry Density in Lb. per Cu. Ft. = Slurry Density in Lb. per gallon × 7.481

Cu. Ft. of slurry per sack cement

$$= \frac{94 + 0.94 \text{ (Lb. water per 100 Lb. cement)}}{\text{Sp. Gr. of Slurry} \times 62.4}$$

2. *Capacity and Quantity Required for Fill-Up:*

Cu. Ft. of open hole or pipe per 100 lineal feet $= 0.5454d^2$

Sacks cement required for fill-up of 100 lineal feet of open hole or pipe

$$= \frac{0.5454d^2}{\text{Cu. Ft. slurry per sack cement}}$$

Where: d = diameter of hole or inside diameter of pipe in *inches.*

3. *Annular Space and Quantity Required for Fill-Up:*

Cu. Ft. of annular space per 100 lineal feet $= 0.5454(d^2 - D^2)$

Sacks cement required for fill-up of 100 lineal feet of annular space

$$= \frac{0.5454\ (d^2 - D^2)}{\text{Cu. Ft. slurry per sack cement}}$$

Where: d = diameter of hole or inside diameter of outer pipe in *inches.*

D = outside diameter of inner pipe in *inches.*

4. *Displacement:*

Same formulas as for Annular Space—No. 3 above except change $(d^2 - D^2)$ to read $(D^2 - d^2)$, —where D = outside diameter, and d = inside diameter of pipe in inches.

Dependable on-the-job

IN DRILLING AND PUMPING SERVICE!

ENGINEERING FEATURES OF Climax Engines

1 *Medium speed, medium weight and portable.*

2 *High load capacity—modern precision bearings both main and connecting rods, replaceable in the field.*

3 *Aluminum pistons for cool operation with natural gas or L.P.G. fuels.*

4 *A lot of "horses" in one package with ample reserve for emergencies.*

5 *Load equally divided between two or more compounded engines by means of a simple, automatic vacuum-actuated synchronizer.*

EXTRA POWER to meet peak loads is built-in in every Climax Blue Streak Engine.

Designed for oil field service, Climax Engines incorporate every feature that experience has proved desirable in drilling and pumping service.

Dependable, instant-starting, fast accelerating, smooth running—these flexible prime movers operate with unmatched economy and efficiency on natural gas, by-product gas, butane or gasoline. Choice of AIR START or gasoline starting engine optional.

Investigate Climax performance before you invest in any engine. For bulletins, write Climax Engineering Company, Clinton, Ia. *Regional offices: Chicago, New York, Ft. Worth, Tulsa, Los Angeles.*

CLIMAX R6I ENGINES, *in Triple Series, on Emsco Drilling Rig.*

OTHER CLIMAX BLUE STREAK ENGINES, 4 and 8 cylinder in-line, and 8 and 12 cylinder "V" Types, available to 420 h.p. at 1100 r.p.m. Write for bulletins.

climax BLUE STREAK ENGINE
Builder of Climax DIESELS and GENERATING SETS
CLIMAX ENGINEERING COMPANY

MID-CONTINENT DISTRIBUTOR
The Continental Supply Company
General Offices, Dallas

CALIFORNIA DISTRIBUTOR
Climax Engines & Parts Company
2050 Santa Fe Ave., Los Angeles

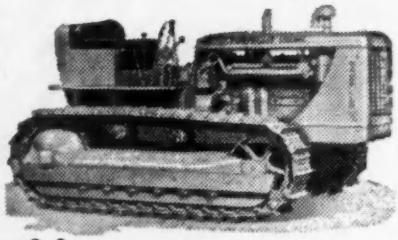
Hinged Railing Clears Gang Truck Bed for Quick Handling of Materials

EQUIPMENT HANDLING

Much rigging-up time may be saved on truck-mounted equipment by installing safety railings in the manner followed by one operator. Instead of permanently affixing railing standards to the truck bed as is commonly done, fittings are welded first to one leaf of a heavy hinge, the actual weld being made as close as possible to the center of the hinge. With the railing laid in the thrown-back position as shown, the several hinges are placed flat on the bed and either welded or bolted in place.

In the upright position, the railings are stood up in the usual position and held in place by spring-equipped chain or latching arrangement depending upon the portion of the truck on which it is mounted. At the well location where fittings, wrenches and lines have to be handled during the coarse of rigging up, the railings may be thrown down, leaving a relatively wide area around the equipment where men can work in comparative comfort and with greater speed. Such railings are especially desirable on all portable field equipment, such as well-pulling units, clean-out drilling units, etc., being particularly needed beside the controls where the operator stands.

For Power Plus Performance on Pipe Line Projects



Use

CATERPILLAR TRACTORS

Caterpillar Equipment has "been in the army" for the past three years, both at home and on foreign fronts; helping to build the world's greatest, most important pipe lines. Tractors, Engines and Electric Sets have proved their superiority and dependability.

SOUTHWEST MACHINERY CO.

Your Caterpillar Distributor in the Heart of the Mid-Continent. Sales and Service

OKLAHOMA CITY TULSA

Pivoted Bending Shoe Distributes Pipe Stress

LINE PIPE BENDING

When the weight of the side-boom tractor is utilized to hold down a joint of pipe while the winch line is used to elevate one end and thus bend the pipe to conform to irregularities of the ditch, trouble is sometimes encountered through partial collapse of the pipe wall at the edge of the device utilized to place weight on pipe.

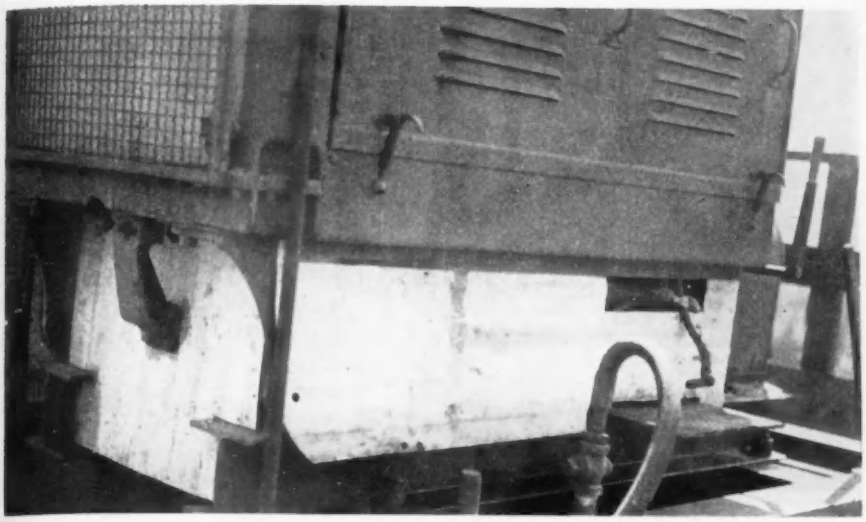
One contractor avoids possible severe deformation of the pipe wall by utilizing a pivoted shoe, mounted between the legs of the side boom. The shoe is formed to the size of the pipe being bent, and is fitted with a long cylindrical bearing, at right angles to the pipe when being bent. Through this bearing is run a heavy support pin, preventing lateral movement of the shoe, but permitting it to rotate about the pin as the pipe is bent, and thus to accommodate itself to the changed surface of the pipe wall.

The effect of the pivoted shoe is to divide the amount of angular deflection in the line between the two ends of the shoe, and thus to distribute the excess stress set up by the bending operation over a considerable area of the pipe wall.

The shoe is readily detached by withdrawing the support pin, and the side clearance of the unit then extended to the base of the bracket in which the pin operates. This permits use of the boom in fully-extended position.

PIPE LINE HINTS

Sheet Iron Enclosure Prevents Chilled Lubricant

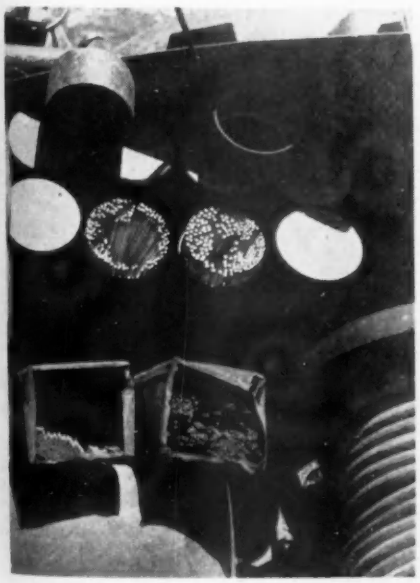


Subjected alternately to the extremes of noon-day heat and chilling night temperatures, the oilfield pumping engine suffers changes in efficiency that are not conducive to economy of operation. One operator has leveled off the temperature extremes of oil in the crank cases of oilfield engines by shielding them on the exterior with tailored panels of corrugated sheet iron. These are cut, slotted and notched so as to fit up into projections of the engine, and overlap somewhat below the top of the I-beam base members. Properly cut, they require little or no bolting or otherwise securing since they are generally self-supporting.

ENGINE OPERATION

The shields serve to block cold wind from sweeping in under the unit, cooling off the engine crank case unnecessarily and resulting in reduced lubricating qualities of the oil. Particularly good results have been achieved in coastal areas where cold ocean breezes usually sweep inland during the afternoons and evenings. Overhaul or service work on the engine is unhampered by this installation since it is a matter only of minutes to slip the panels away.

Cylindrical Cans and Caps Store Welding Rods



An efficient method of sorting and storing electric welding rods carried on the field welding truck is provided in the system shown. Eight light steel cylindrical cans having snugly fitting covers are mounted in a rear corner of the truck bed. Each contains a different size or type of rod, and depending upon the particular size, will hold between one and two gross. Cans are four inches in diameter, 15 inches high and have caps which fit down over the tops for a distance of from two to three inches, assuring security from damp weather. Diligent care of rods in this manner reduces the loss sustained through dampness and rough handling.

WELDING ACCESSORY

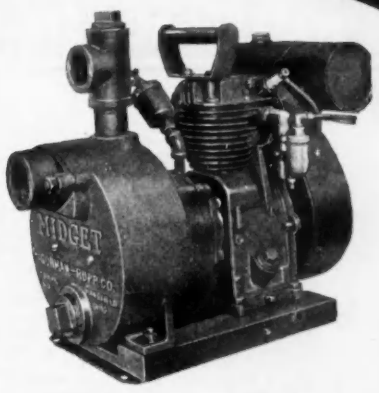
Stored in the cans, rods standing on end are not likely to suffer the damage of cracked flux coatings that commonly befalls those left lying around loose in any type of container that happened to be handy at the time they were removed from the case.

Trenching it's BUCKEYES

They dig trench in any soil with the kind of speed that is helping our nation out of a crisis. The tough, compact Model 11, smallest of the Buckeye Pipeliners, for small crude lines and gasoline and natural gas lines. Model 12 for medium lines; Models 32 and 48 for main lines.

BUCKEYE TRACTION DITCHER COMPANY
Findlay, Ohio
Built by Buckeye
TRENCHERS, SHOVELS, CRANES
BACKFILLERS, TRACTOR EQUIPMENT.

PIPE LINE SUPPLIES AND EQUIPMENT



GORMAN-RUPP PUMPS

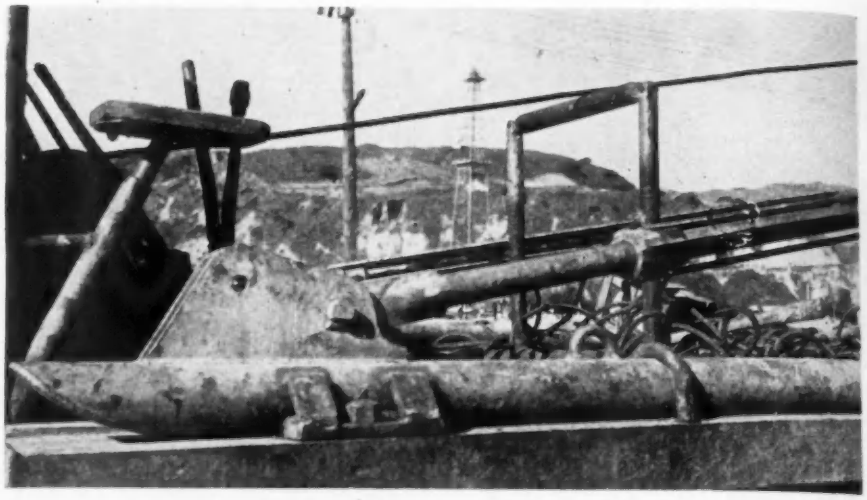
There's a model for every pumping requirement . . . for pumping from 5 to 2100 gallons per minute. The most dependable pump for the least money.

The Clarence L. Boyd Co., Inc.
Phone 8191 LD 745
Tulsa, Oklahoma

Stabilizing Bar Snubs Winch Line Vibration and Insures Smooth Spooling

With small expense, one operator has considerably improved the operation of the stiff-leg attachment on his heavy duty field trucks. Several feet from the winch controls and toward the rear of the truck, was installed a vertical, rectangular framework of 2-inch pipe for stabilizing the hauling line and helping to feed it on to the reel, particularly when the leg is extended out to a near-horizontal position. The assembly consists of two vertical legs welded to a single horizontal pipe, the latter being laid across the truck bed. A single piece of pipe spans the two legs at the top, and is so prepared that it can be disassembled merely by removing two steel pins which slip through matching lugs welded to each end of the top bar as well as in the tops of the two legs. The pins are permanently attached to the unit by having them welded to short lengths of chain immediately beside the lug positions. Width of the horizontal member is governed by the spooling width of the winch, several inches of margin being allowed for safety at each end of the bar. When the leg is extended to extreme positions as shown, this bar helps

SERVICING LINE SNUBBER



to dampen excessive vibration or whipping of the line as it is reeled in or payed out rapidly by the operator.

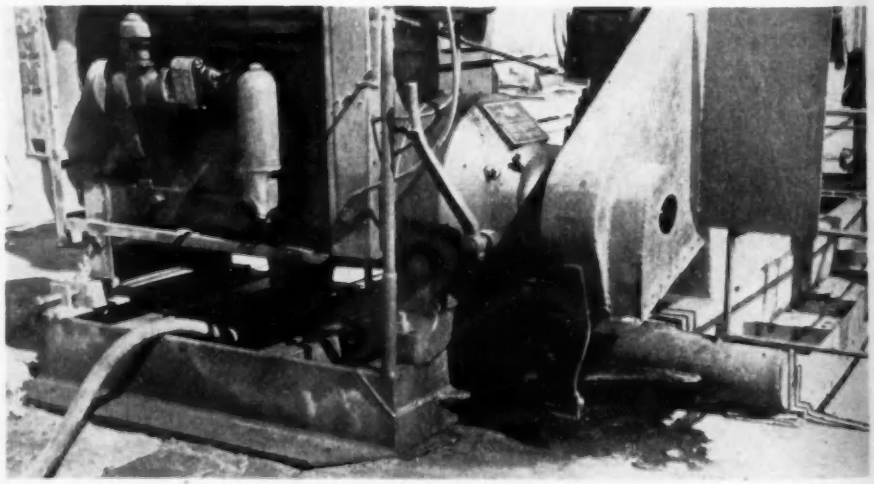
Also shown is the handy seat installed for the comfort of the winch operator. A telescoping support was made of two different sizes of pipe, the outer one being welded in a slanting position to the base of a convenient vertical member of the truck rigging immediately behind the truck cab and beside the winch controls. The wooden seat attached to the top of the angular support is made of two pieces which are joined in the middle so as to provide a crown, saddle fashion, which provides more comfort for the operator on long, uninterrupted field jobs without rest periods.

Extension Base Unitizes Engine and Pump Drive

Practically any size or type of prime mover may be adapted to a unitized pumping unit by using the method employed by the superintendent of one producing company. In this particular instance, a heavy multi-cylinder engine had to be secured to the end of a narrow unit base, which, under normal circumstances, would have made an unsatisfactory and weak connection under the constant strain of the heavy pumping load. An unusually sturdy connection was made by welding to the side of the engine base a length of heavy 8-inch casing, large fillets being welded to the ends, as shown, to lend additional strength. This entire assembly was then welded to the end of the pumping unit, spacing it to the desired point for proper alignment of the belting system.

ENGINE MOUNTING

Experience has proved to the operator that this connection is amply strong to meet nearly any combination of power and pumping unit. While the engine rests on this solidly-welded base, slots are provided for quick adjustment of the unit in setting up belt tension. Should it become necessary to break up the unitized sections, it is a simple matter to cut away the pipe section, with little material loss involved.



PENBERTHY
"REFLEX"
WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

This is one of the complete line of Penberthy gages that meet every liquid level gage requirement.

See Pages 2450 to 2455, Composite Catalog.

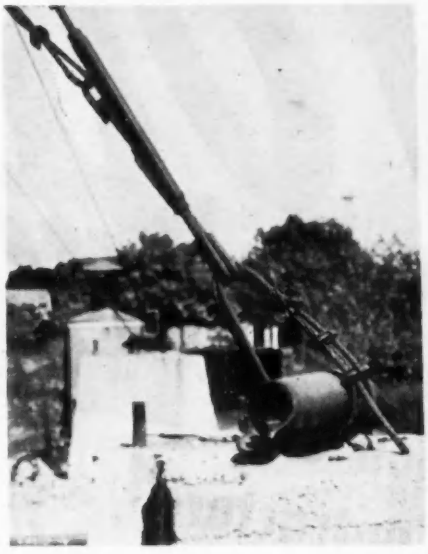
PENBERTHY INJECTOR CO.
DETROIT, MICH. Canadian Plant WINDSOR, ONTARIO

PRODUCTION HINTS

Anchored Pipe Speeds Up Guy Spacing and Tightening

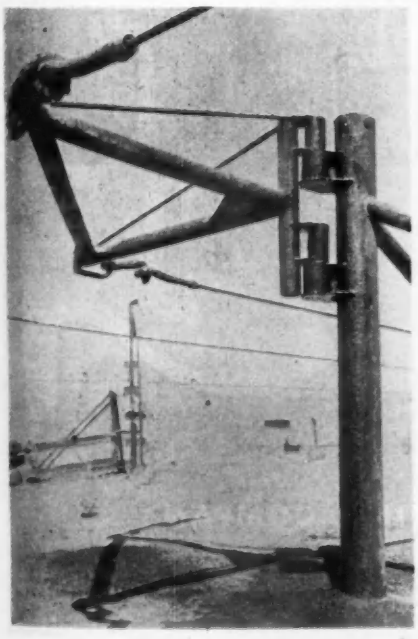
The problem of properly anchoring guy lines of production masts is particularly acute in town-lot districts. Proximity of adjoining property lines or structures prohibits laying out distant anchor points and it is impractical to anchor dead-men close to the well for the near-vertical pull or the guy lines would tend to pull up the anchors. In one town-lot area an operator solved this problem of insufficient space by devising an inexpensive, simple but effective anchor that is adaptable to many of his non-derrick-equipped wells. It is equally effective whether or not the original rig was set on concrete corner pillars.

ANCHORING GUY LINES



Measurements were taken of the average distance between studs formerly holding the derrick leg footings and a standard-sized pipe fitting designed that could be adaptable to all wells. Sections of heavy 4-inch pipe, slightly longer than the distance between two of the foot plate studs, were cut up in the manner shown. Cutting away a portion of each end of the pipe leaves a short "lip" through which holes may be burned, permitting it to be slipped over the studs and be bolted down with two nuts, one of the latter being a jam nut. By building standard fittings such as these, the operator may leave them installed on the wells or have a single set made up which may be taken away each time in the pulling truck unit. Cables wrapped around this type of hold-down are in no danger of being cut due to unusually sharp bends, and maximum area is provided for lateral shifting of the several wraps if needed. They may be used also in serving as guy line anchors for truck-mounted types of masts that frequently are used in servicing wells in congested areas.

Pipe Turn-Post Pinch-Hits For Unattainable Equipment



A jack line turn post devised by one operator having production in a shallow field is both simple in construction and easy to keep lubricated. Providing a full turn of 90 degrees, the triangular arm, mounted on a central post, is pivoted about two short, vertically-mounted 3-inch pipe posts which in turn rotate inside bearings or cups of slightly larger diameter. These cups are filled with heavy lubricating oil or crude oil from the wells, which in this field is of a heavy gravity.

JACK-LINE EQUIPMENT

Construction is relatively simple, the pipe materials being all welded and securely braced. Two lengths of sucker rod extending outward from the central pivot of the arm are welded to the outer ends of the triangular arm, providing additional rigidity of the unit. For the relatively light load on the swing post and very slow motion of the pump strokes, this post has been found to be both serviceable and easily maintained, the cups holding an ample supply of lubricant. When wearing surfaces of the bearings become excessively worn, it is relatively simple to disconnect the well lines, lift off the swing arm and weld on new bearing units.

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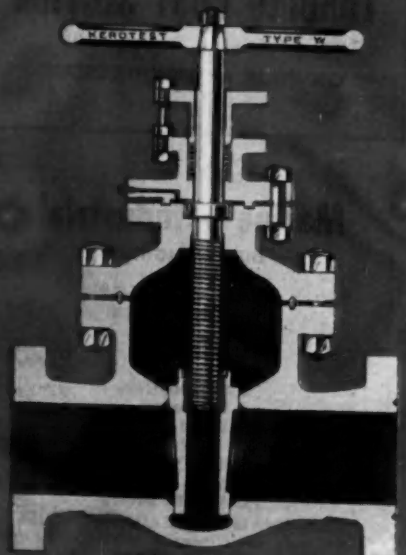

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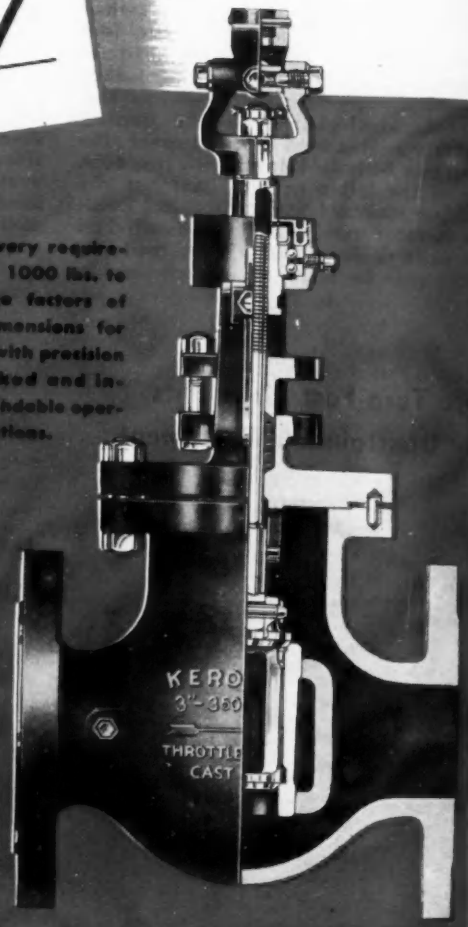

KEROTEST

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PENNA.

1

2

3

4

1. Motorists in Detroit were more fortunate than those in some other areas during the strike-caused gasoline scarcity. Here, hundreds of them form long lines as they wait to make their way back through the Detroit-Windsor tunnel after filling up in Canada. —*Acme Photo.*

2. Lieut. Comdr. F. A. Westphall, U.S.N., who will be boss of 22 refineries and about 25,000 men in the Houston district, opened offices last week on instructions of Vice Adm. Ben C. Moreell, in charge of yards and docks for the Navy.

3. Lynn E. Troxel of Rittman, Ohio, near Akron, dreamed up this odd craft. It has parts from an old Roosevelt automobile, is powered by a washing machine motor, has a clutch from a sewing machine, and a coil from a Model T Ford. —*Acme Photo.*

4. A grim reminder of what can happen when a big gas-distillate well catches fire. This was Phillips Petroleum Company's Airport 1, discovery well for the Bethany field, Central Oklahoma. The 120-foot derrick was reduced to a mass of twisted steel by the fire, which killed one member of the drilling crew.

5-6. The first women to be appointed corporate officers by Standard Oil Company (New Jersey) are Miss Muriel E. Reynolds (left) of Westfield, New Jersey, and Mrs. Margery M. Porter of New York City. "The appointment of Miss Reynolds and Mrs. Porter is another indication of the growing importance of women in industry," said President Eugene Holman. "As assistant secretaries they will share the responsibilites in the corporate administration of our company."

5

6

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Built with Precision to serve you with profit • Like a level, J&L Wire Rope is precisionbilt. It is built from J&L Controlled Quality Steel . . . by men of skill and experience . . . on machines of the latest design. This combination naturally produces for you wire rope that works better, lasts longer, returns you greater profit on your investment in equipment.

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The Outlook

The administration hopes next month's management-labor conference will come up with a formula for solution of the labor problems. There is no clear-cut administration policy on labor, with the result that when Department of Labor efforts at conciliation fail, the only escape is government seizure, which merely provides a breathing spell in which management and labor can work out an agreement.

* * * *

The oil industry's efforts to reach an amicable settlement of the CIO demand for peace-time take-home wages at wartime levels will be fettered by the position taken by OPA that it can stand a 30 percent wage hike without price increases.

* * * *

Retreat from gasoline to cheaper fuels, started with development of jet propulsion for airplanes, may be accelerated by Ford's experiments in the use of jet propulsion for ground vehicles. Currently working out on trucks, success in that field may mean quick adaptation to passenger automobiles.

* * * *

Despite our dislike of the regimes in power in those countries, exports of essential products will be continued to Argentina and Spain but at bare subsistence levels. Really decisive action against Argentina's Farrell cannot be taken by the United States so long as Britain depends so heavily on Argentine meat.

* * * *

Officials predict that passenger tire production may jump from 2½ million to 4 million in the last quarter. If this increase is realized, tire rationing might end within the the next two or three months.

* * * *

Labor pressure for higher wages will force oil producers and refiners to put the squeeze on OPA for higher prices. Some Mid-Continent producers believe an increase in the price of crude will be authorized within 30 days, primarily in order to meet the wage increase demands.

* * * *

Major companies in Oklahoma are devoting more study to technology of secondary recovery and even the smaller independents are considering its possibilities before selling or abandoning stripper areas.

* * * *

Air freight may become important factor in aviation gasoline market. A serious effort to carry freight by planes began only a year ago, yet 40 cargo planes are in regular service now. Some air line operators predict a network of cargo flights across the United States, employing from 400 to 600 planes within 5 years.

* * * *

Current air freight prices cannot compete with railway costs, and must be cut by 75 percent. Present planes cannot do this. Manufacturers have made no serious effort yet to build commercial cargo planes, but vast improvement may come now they are free to study the problem.

* * * *

Wildcatting as a sideline for industrial concerns will lose its appeal as excess profits taxes are scaled downward. Lowering this tax will mean that exploration expenses can't be charged off against it. Some companies that dabbled in oil as a way to spend some of their wartime profits have started dropping out of the business already.

* * * *

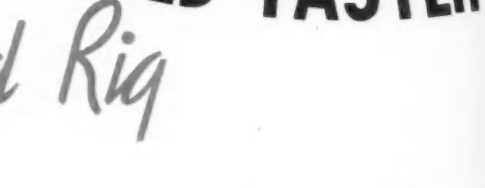
One question not answered in the Anglo-American agreement, that of foreign exchange, may present itself when the pact becomes operative. The British may see fit to restrict imports of oil which is to be paid for in dollars because of the relation between sterling and the U. S. dollar. Such exclusion would be against the spirit of the agreement, American representatives say.

GET YOUR DRILLING JOB STARTED FASTER

With a Franks Skid Rig

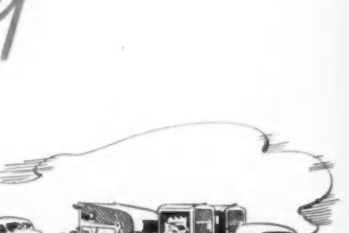
● UNLOADED IN 1½ HOURS

The power plant, drawworks, rotary table and drives on Franks Skid Rig may be moved in one section for inter-field moves. Where necessary, drawworks and power plant can be divided into two loads by driving out only four tapered pins in the main skid without disturbing guards or drives. For inter-field moves derrick may be left in one section with blocks strung and tongs hung. For longer moves the derrick may be quickly and easily disjointed in two or three sections. Assembly and disassembly of derrick is accomplished with minimum time and effort by means of tapered guide plugs designed for quick alignment and maximum rigidity.



● ASSEMBLED IN 2½ HOURS

In a Franks Skid Rig there are fewer components to assemble since power plant, drawworks, rotary table and drives are integral parts of the main skid and are moved as one or two sections. If main skid has been divided into two loads it is easily reassembled with Franks patented pilot frame joint. One leveling operation levels the whole rig. The raising hinge shoes and socket provide a simple, safe, and convenient attachment of derrick to drawworks frame—no careful alignment, no hinge pins, no bolts necessary. Unit can be rigged up and drilling started within a few hours after reaching location.



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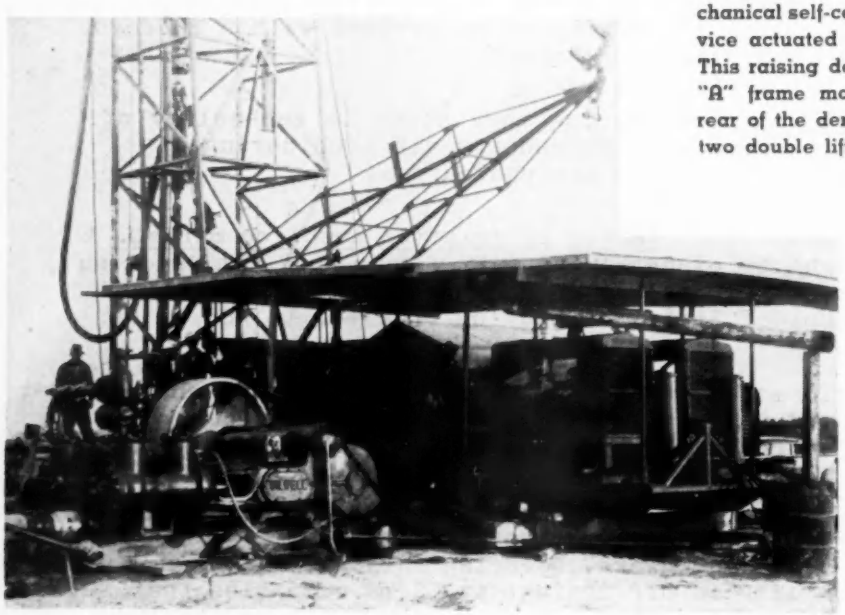
Franks Derrick is raised by a mechanical self-contained raising device actuated by the drawworks. This raising device consists of an "A" frame mast fastened to the rear of the derrick near the base, two double lift lines anchored to the end of the boom and to lift points on the derrick, and a five line block and line arrangement located between the end of the boom and an anchor point on the drawworks frame. A double hinge point raising arrangement has been incorporated to keep the center of gravity of the derrick always ahead of the hinge point, eliminating the use of a snubbing line while raising or lowering.



Franks are the most complete and have greatest portability of any skid rigs on the market. With every part properly balanced in power and capacity, the utmost in economy is effected. For rigs capable of drilling to 6,000 ft. write for Franks Bulletin No. 114 and for rigs capable of drilling to 7,500 ft. write for Franks Bulletin No. 115.

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The Week's News

SENATOR Joseph O'Mahoney told late last week about the different opinions his Senate Petroleum Investigating Committee had received about disposal of war emergency plants, such as the two Big Inch pipe lines, 100-octane plants, etc. Story below.

Would Keep Lines Running—Closing down of the two Big Inch pipe lines by the RFC Reconstruction Finance Corporation brought a move in Congress last week to keep the lines running under government ownership and operation. Without authority to intervene, it was disclosed, by PAW Administrator Ickes and Surplus Property Administrator Symington were forced to acquiesce in the RFC action; neither, however, gave it his approval. Page 60.

Title to Tidelands—Assertion of federal title to the continental shelf is seen by Ickes as accentuating the importance of a Supreme Court decision on who owns the title to the tidelands. Page 63.

Anglo-American Oil Pact—The new Anglo-American petroleum agreement will eliminate many of the handicaps suffered by American oil operators in the Middle East, it was declared by Ickes, expressing the hope that the document will go to the Senate soon and be ratified quickly. George A. Hill, Jr., of Houston cites need for experienced oil man on proposed commission. Page 62.

Forced Purchases Charged—The Department of Justice moved to the aid of companies operating abroad, filing a suit against electric companies charging that they had fixed prices and divided among themselves the purchases of electrical equipment by oil companies for use outside the United States. Page 76.

Another PAW Closedown—Another big segment of PAW activities will come to an end at the close of the month when the material division is disbanded. Oil operators thereafter needing properties assistance will apply to the regional offices of the Civilian Production Administration, after November 3 the new name for the War Production Board. Page 63.

Production Restrictions—Texas has lifted production restrictions brought about by the refinery strike, but danger of heavy storage is cited. Oklahoma majors want restrictions continued. Page 64.

Refineries on Stream—Following return to work under U. S. Navy supervision, of striking refinery workers, "seized" plants are again on stream. Page 62.

AIME Sessions—Three district meetings of Southwestern chapters, AIME were held during the past week. Page 64.

API Convention Prospects—Advice given by API officials regarding Chicago convention space is "stay at home unless you have confirmed hotel reservation." Page 63.

FPC Continues Gas Hearings—Free access to markets and strong opposition to any federal control. Thus testimony before FPC gas hearings (Oklahoma City) followed the Kansas City pattern. Page 61.

Gas Reserves Committee—A natural gas reserves committee, named by ANGA is to correlate its work with that of the committee on oil reserves of API. N. C. McGowen, Shreveport, is chairman.

O'Mahoney Points Out Divergence of Views on Disposal of Surplus Works

A wide divergence of opinion as to the proper disposition of the war-built government-owned oil facilities was disclosed October 13 by Senator Joseph C. O'Mahoney, chairman of the special Senate Petroleum Investigating Committee.

Views of company executives, both in and outside the oil industry, trade associations, labor organizations and groups likely to be affected by the disposal of the properties were incorporated by O'Mahoney in a report to his committee and to the Surplus Property Subcommittee of the Military Affairs Committee in advance of hearings which will be held within the next few weeks by the two groups jointly. Walton Jones, president of Cities Service Company, is chairman of the committee which will make the industry's presentation.

Recommendations for handling the Big Inch pipe lines were submitted to O'Mahoney, ranging from their sale at public auction without any conditions to maintenance for stand-by strategic purposes in the event of another emergency. Other suggestions called for their use for the pumping of products; for natural gas; and as a common carrier for the benefit of the small independents.

"For example," O'Mahoney reported, "the Independent Natural Gas Association of America warns of danger in protecting one industry against another which type of protection is said to be "basically and fundamentally wrong." Accordingly, this association submits that the pipe lines, as well as all other facilities having to do with oil and gas production, transportation, refining, or marketing, shall be offered for sale or lease by competitive bidding, with no conditions attached concerning their subsequent use.

"This opinion, however, is vigorously opposed by certain coal interests and labor organizations representing mine workers as well as by certain railroads. The coal industry takes the position that the pipe lines should be shut down and held only for purposes of national defense inasmuch as the dislocation of the coal industry—if the lines were used for transportation of natural gas—would outweigh any possible financial return to the government from their sale. Coal representatives point to the potential cost of unemployment compensation and relief, etc. Similar views are voiced by the United Mine Workers of America.

"On the other hand, the Commission for Conservation of Oil and Natural Gas points out that natural gas in Texas 'is a drug on the market' and should be transported to the East to meet emergency and seasonal peak requirements and also be available for secondary recovery of oil in the Appalachian region. Other communications urge that gas is the incomparable fuel and that its distribution in the areas served by Big and Little Inch pipe lines would benefit thousands of families in low income brackets.

"As against the use of the lines for natural gas, the Association of American Railroads maintains that the large proportion of revenue now obtained from the transportation of coal would be jeopardized by the wider distribution of natural gas as a completing fuel and point to the resulting hardship to railroad employes, the resulting necessity of increasing rates and for maintaining a healthy railroad transportation system in the event of another war. Hence it favors shutting down the pipe lines and holding them solely for strategic purposes."

Common Carrier Plan

"The senate committees have also received a number of replies urging that the pipe lines be disposed of to a syndicate for operation as a common carrier either of crude or products or both, thereby serving numerous independent oil companies which now encounter difficulty in obtaining cheap means of transportation. Other communications state that transportation by tankers is cheaper than by the pipe lines and that in the long run the latter could not be profitably operated."

O'Mahoney reported, the consensus is that tankers should be sold to private buyers and not operated by the government, with some urging that independent operators be given the first opportunity to purchase while others believe the companies now operating the vessels should have first option.

There was no question as to the dis-

position of floating equipment used on inland waterways. The American Waterways Operators, Inc., holding that as fast as such equipment is returned off-charter, it should be declared surplus and disposed of pursuant to existing law, and that the government should refrain from chartering, leasing or renting any towboats, tugs or barges except for products specificially needed by the armed forces.

In the case of the 100-octane plants, it was emphasized they should be disposed of as soon as possible. Independent oil companies took the position that where the present operator has an option there should be no interference with its exercise, but if the option is not taken up, the independents should be allowed a priority to purchase on the ground that the larger integrated companies already have an advantage. Others held that no company should be allowed to buy at such a low price that it would thereby be placed in a better position to compete with others which had invested greater capital in refinery facilities under normal conditions, and one association urged the facilities should not be sold to purchasers who operate under special tax exemptions.

RFC Figures

Discussing the closing down of the two Big Inch lines, the report disclosed that this action enabled the RFC immediately to realize $15 million on the oil and products in the lines, and avoid a loss of nearly $1,500,000 which would result from delay in emptying them.

It was explained that there was $8 million worth of products in the Little Big Inch, much of it of lower grades than will be available after this month, and delay in selling them would have entailed a loss of $900,000. In addition, War Shipping Administration is expected to reduce its tanker rates before the end of this month, and a 10-cents-a-barrel reduction would have cost the government $290,000.

In the case of the Big Inch with $7 million worth of crude, it was pointed out that some of this was lower-value West Texas oil and that the halting of operation without emptying the line would have resulted in contamination of the East Texas crude, with consequent loss of $300,000.

The RFC, O'Mahoney said, estimates it will lose approximately $266,000 to displace the crude in the line with water and another $243,000 to displace the water with a non-explosive, non-corrosive mixture of air and inert gas.

McDougald to Ethiopia

Sinclair Petroleum Company has sent D. A. McDougald, assistant to the president, to Addis Ababa, Ethiopia, to open offices for development in that country under the agreement between the company and the Ethiopian government. Other men will soon be sent there to start preliminary work. McDougald served in the Navy during the war as a petroleum officer in the South Pacific.

Steps Taken to Cease Operations of War Emergency's Big Inch Pipe Line

The first definite move in Congress to halt the closing down of the the Big-Inch pipe lines was taken October 9 by Senator William Langer who introduced a bill to keep the pipe lines running under government operation and ownership.

In introductng his resolution, Langer told the Senate he could readily "understand why the big interests and others are opposed to having the government own these two lines" but knew of no reason why that should not be done.

"Right now they (the two-lines) can bring in 235,000 barrels of gasoline a day from the South to the East," he said. "If they are operated, they will do much to avert suffering because of lack of fuel among the people of the East."

As Langer introduced his measure, Surplus Property Administrator W. Stuart Symington disclosed that he has agreed to a proposal by PAW that the Big Inch line be emptied by pumping in water, but refrained from any expression of approbation or criticism of the Reconstruction Finance Corporation's decision to get out of the pipe line business.

Symington did say, however, that it had been hoped to dispose of the line while it was still in operation but that in view of the circumstances he had no alternative but to aquiesce to PAW's suggestion.

One Line Emptied

The Little Big Inch has already been emptied, shutting down on September 15 and, after determination that there were no users seeking it, filled with water treated with sodium hydroxide pumped in beginning at 11:40 p.m., September 30.

Oil now in the Big Inch has been sold for immediate delivery and no contracts have been made for oil to be delivered to the line after October 15.

Symington pointed out that the several government pipe lines have not yet been declared surplus and thus have not come upder the jurisdiction of the Surplus Property Administration. That agency, however, will assume jurisdiction for their disposal when they are declared surplus.

Total movement through the Big-Inch up to August 31 was 260,750,000 barrels of crude, while the Little Big Inch had moved 156,000,000 barrels of products.

Symington made his views known in a letter to Deputy Administrator Davies.

"It had been hoped that disposal of this pipe line could be accomplished while it was still in operation. From your letter it appears that the oil presently in the pipe line or to be put into it up to October 15, has been committed for sale for immediate use and that no oil has been contracted for by you for delivery to the pipe line after October 15. Hence, water must be used to force the oil through the pipe line.

"Under these circumstances, the Surplus Property Administration has no alternative but to acquiesce in your program. You will understand, of course, that such acquiescence is not intended as reflecting any opinion on what action should be taken in the light of possible shortages of oil on the East Coast in the immediate future, a matter which is completely outside the jurisdiction of this administration."

On October 11 deliveries to the Longview terminal of the Big-Inch were terminated by some of the supplying companies. The carrier will clean up accumulated stocks at the Longview terminal before displacing the oil with fresh water. An all-time record for crude movement was established September 29 when a total of 342,258 barrels of mixed crude including 230,957 barrels of East Texas Oil was pumped into the carrier. Shipments during the week ending October 1 averaged 314,294 barrels daily.

Seeks Atomic By-Product For Use in Oil Industry

Denial by the government to share with private industry certain products developed in creation of the atomic bomb is costing the nation millions of barrels of oil which may otherwise never be produced, according to R. E. Fearon, consultant for Well Surveys, Inc, Tulsa. (See THE OIL WEEKLY, September 10, 1945, page 51, for his "Oil Uses for the Atom.") Fearon brands the "secret" classification as "ridiculous" and declared scores of scientists throughout the world today can deduce all except a limited amount of engineering data on atomic energy by study of information already existing in the literature.

For the use of the oil business only a comparatively minute quantity of certain products developed at the Hanford, Washington atomic bomb plant would be of great benefit, Fearon declared.

"We could use these products today to help discover millions of barrels of oil that cannot otherwise be recovered," Fearon said. "Undoubtedly they have many pounds of these products. All the oil industry would require is a few ounces, a pound or less, for all time. A few grams would be sufficient to conduct all experimental work to prove its worth to the oil business."

Because of the extreme rarity of some of the radioactive substances needed by the firm for its nuclear well logs, progress in research has been slow and costly. If sufficient radioactive material could be made available, these valuable contributions to the entire oil industry could be brought about very quickly. Actual cost of the products sought by the oil industry from the government would be negligible compared with the value of oil which could be recovered, Fearon said.

Opposition to Federal Control Again Expressed as FPC Hearings Continue

Strong opposition to any extension of federal control over the oil and gas industry within the state continued to be voiced by both state and private witnesses as the Federal Power Commission resumed its natural gas investigation hearings at Oklahoma City October 9. The sessions continued through the week.

At the same time, the witnesses urged higher prices, declaring that low prices of natural gas and oil at the well are a deterrent to enforcement of conservation regulations.

Governor Robert S. Kerr of Oklahoma, told the commission that there could be no question but that the conservation and ratable taking of oil and gas can best be handled by the states.

"The states," he said, "have the inherent and necessary police power to carry out and perform all of the functions necessary to a total program of conservation and protection of the correlative rights of those who, under our constitution and laws, are the owners of the production. The powers of the federal government in this regard are and of necessity must be limited."

Reford Bond, chairman, Oklahoma Corporation Commission, related the history and current efforts as to Oklahoma's policy and law with respect to production, waste and conservation.

Representative Ross Rizley, Eighth District of Oklahoma, urged that efforts be made to provide an adequate price for the gas to the land owner.

Royalty Discussed

In answer to questions by Commissioner Smith, he said there probably is some ground for argument as to whether the ⅞ and ⅛ division is equitable, but that he does not believe the Oklahoma Corporation Commission has authority to make any change in that. He added, however, that it is probable that the Corporation Commission might have the right "to fix a minimum field price for gas."

H. W. Long, land and royalty holder in the Hugoton field, near Guymon, Oklahoma, complained of the low price of gas and the small benefit that the royalty owners are getting from the gas under their land. He asked that some regulatory body correct this situation.

Elmer Capshaw, gas engineer, Oklahoma Corporation Commission, told the commissioners that Oklahoma's gas reserves at the first of 1945 amounted to 8,829,053,000 mcf and that production in 1944 amounted to 193,463,000 mcf, making the life of the reserves at the 1944 rate of production 45.6 years.

He also pointed out that his estimates of reserves in Oklahoma did not include several potentially important discoveries which had been made or indicated within the state since the beginning of 1945.

Don McBride, chairman, Oklahoma Planning and Resources Board, declared that the development of chemical industries based on the use of natural gas as a raw material or as a fuel will depend on the answers to such questions as, how great is the supply, how long will it last at present consumption rates, and will the price remain cheap as demand increases?

"It is conceivable that the time may come when natural gas will become more valuable as a raw material for synthetic products than as a fuel," McBride said. "When this time comes the economic laws of supply and demand will determine the importance of natural gas.

Leland Richardson, attorney representing Louisiana, during cross-examination attempted to develop the point that if Oklahoma permitted transportation of its natural gas to distant markets, the state would in a relatively short time find itself without adequate fuel supplies obtainable at home. McBride insisted that that fear is not well founded because by the time present known reserves are exhausted he is confident that additional reserves will have been discovered. He said that the time when Oklahoma's gas supply becomes exhausted is so far in the future that he does not feel that it is a problem that presents any alarm.

In answer to a question by Tom J. MGrath, representing coal and rail labor groups, McBride asserted, "when we run out of gas, we will have atomic energy."

Wesley E. Disney, representing the Natural Gas Industry Committee, drew from McBride the statements that Oklahoma coal is shipped to out-of-state markets as is Oklahoma oil, and that no one is protesting this out-of-state shipment of the state's depletable natural resources.

In its attempt to prevent the waste of gas and dissipation of reservoir energy, the Oklahoma Corporation Commission has set up strict orders and testing methods to determine gas-oil ratios, Dan O. Howard, geologist of the conservation department, said.

Carbon Black Supply

There should be no alarm over the exhaustion of natural gas for the carbon black industry, John F. Gallie, engineer for the Cabot Carbon Company, Pampa, Texas, told the FPC.

Reserves of gas will be increased by deeper drilling and continued development of the oil and gas industry, Gallie predicted.

There has always been a supply of gas and the reserves have been increasing," he argued.

On cross-examination he would not predict what will happen in the next 25 years. He explained that the shortage of carbon black for the production of synthetic rubber during the war period was not due to shortage of the material, but of plants capable of producing the required amount as fast as it was needed.

Walker T. Pound, chief conservation officer of the OCC, declared that low prices of natural gas and oil at the well head are a deterrent to enforcement of conservation regulations.

"Further, we believe that natural gas should be permitted to compete in an open market with other fuels, subject to such regulations as is necessary to protect the interests of both producer and consumer."

The market for natural gas from major "dry" gas fields of Oklahoma has increased by leaps and bounds during the last 5 years, while the market for gas produced in the oil fields has declined steadily, Lawrence A. Alley, chief clerk of the state conservation department, testified.

Outside of the testimony of Dr. E. DeGolyer which was given at the Kansas City hearing, the Natural Gas Industry Committee presently plans to withhold further presentation of its case until the final hearing at Washington, and indications are that coal and railroad interests and the FPC staff will do likewise.

Oklahoman Takes Oath As a Member of FPC

Harrington Wimberly of Oklahoma, one of two new members of the Federal Power Commission appointed by President Truman, took his oath of office October 8, succeeding retired Chairman Basil Manly. The new commissioner is a newspaper man.

H. Wimberly

Born in Hale Center, Texas, June 22, 1901, Wimberly moved to Hagerman, New Mexico, with his parents in 1904. Upon graduation from University of Oklahoma in 1925 he became advertising manager of the Altus (Oklahoma) Times-Democrat, of which he became editor and publisher in 1929 and owner in 1936. He was director of the Oklahoma Press Association, 1935-1938, and president in 1937-38. From 1940 through 1943 he served as director of the Southern Newspaper Publishers Association.

Wimberly served as chairman of the Democratic State Committee of Oklahoma State Committee of Oklahoma from February, 1944, until he resigned last month. He was a member of the Board of Regents, University of Oklahoma, 1940-1943, and was renamed a member in 1945 for a seven-year term; he was president of the board in 1942. In 1944 he was named public interest director of the Federal Home Loan Bank of Topeka, Kansas. He is married and has two daughters, Janis, aged 14, and Mary Margaret, ten.

Ickes Hopes New Anglo-American Pact Will Be Ratified With Little Opposition

Denominating the new Anglo-American petroleum agreement as highly satisfactory, Secretary Harold L. Ickes expressed hope last week that it would meet less opposition in the Senate Foreign Relations Committee than did the original agreement a year ago.

Home a week from his European trip, Ickes said that he had not yet reported to President Truman, who was absent from Washington when he returned, but had asked for an appointment as early as possible to pave the way for sending the agreement to the Capitol for ratification.

"Those of us who went over to negotiate with the British were not only satisfied with the results but very much pleased with the attitude of the British," he said. The new Minister of Fuel and Power, particularly, was "very understanding, very incisive and very capable negotiator," he added.

Ickes disclosed that no advances have been made to Russia to participate in the agreement and expressed the view that it might be wise to get ratification before approaching other countries.

He also said that no oil matters not subject to the treaty had been discussed in London.

Outlining the advantages of the agreement, Ickes said "from our point of view, it will protect American interests that already exist in the fabulously rich oil field of the Middle East, and will result in removal of some restrictions which have made it difficult for us to operate in Saudi Arabia and elsewhere in the past." Included in the handicaps which will be eliminated, he said, is the so-called "red-line agreement" and "all undisclosed restrictions that have existed in the past, so that our nationals can go in and develop their properties and dispose of their products in a competitive market.

Hill's Views

The Middle East pipe line was not discussed in London, he disclosed, adding that that will be something to be taken up by the commission which is to be created under the agreement. He dismissed as unfounded reported charges by refiners that they have been unable to develop their properties because they were forced to buy equipment from sterling sources, which would be in violation of Article 11 of the pact.

Also a matter for determination after the commission gets into operation, Ickes said, is the future of Petroleum Reserves Corporation, "now peacefully sleeping."

George A. Hill, Jr., president of the Houston Oil Company of Texas, one of six consultants from the petroleum industry to advise with government heads on the proposed treaty, said the agreement would carry much weight in the U. S. domestic oil industry if the international commission is composed of experienced oil men. Great respect will be attached to the fact findings of such a committee, he believes.

Hill said the agreement contains three fine commitments between the two countries: 1) recognition of the principle of equal commercial opportunities to nationals of both nations; 2) recognition and agreement to respect the oil concessions of both countries now in existence, and 3) engagement by each government that such government and its nationals will not hinder or obstruct the operations of nationals of the other government in oil operations.

Under terms of the treaty, meeting the objections as listed in a resolution by Hill drawn up in 1944 and adopted by several states and oil associations, the international commission, to be set up by the agreement, cannot fix production quotas; cannot make market allocations; cannot fix prices or prescribe conservation regulation; cannot make recommendations with respect to domestic oil business; cannot determine status of various countries as to whether they are peaceable or not; cannot fix cartels, and is not tied to the provisions of the Atlantic Charter.

"Nor would it, by ratification, bring about any change in the powers of the federal government," Hill declared.

With these objections out of the way, Hill said he saw no reason for the agreement not to be ratified by the Senate.

Hill also praised the work of the government representatives—Harold Ickes, Ralph K. Davies and Charles Rayner—in achieving such splendid results.

Forced Purchases Charged

A charge that American companies were being forced to buy equipment from sterling sources was made by Senator E. H. Moore of Oklahoma, who took the matter up last month with Assistant Secretary of State Will L. Clayton.

Moore told the Senate October 11 that the companies were forced to buy from Empire sources not only to rebuild facilities destroyed during the war but for new construction and development, naming specifically Standard Vacuum Oil Company operations in the Straits settlements and the Federated Malay States.

In answer to a letter from Moore, Clayton disclosed that complaint also has been received from the company and said the matter was being given "earnest consideration." A second letter brought an acknowledgement and iteration of the department's interest and a third letter sent by Moore on October 10 intimated that some members of the Senate might be unwilling to ratify the agreement unless the situation was cleared up.

"Aside from being an expression of disapproval of our termination of lend-lease," Moore told the Senate, "the action of the British appear to be an obvious method of exerting pressure upon the United States to force a more favorable attitude with respect to postwar financial aid for rehabilitation of Britain's world trade and commerce.

"At this moment, while the interest of American nationals in the United Kingdom is being destroyed by this arbitrary action, British government officials are suggesting that this and other trade barriers will be removed if and when we see fit to grant postwar financial aid to the British on such terms as they deem satisfactory."

"Leave Gun at Home"

Senators Wayne Morse of Oregon and Bourke B. Hickenlooper of Iowa joined Moore in criticism of British trade policy, with Moore finally suggesting that negotiations for financial aid be suspended until the order against American oil companies is revoked.

"Surely it is not too much to ask the man who knocks at your door for relief to leave his gun at home," Moore said.

"Not only is this discrimination unfair but it is working an irreparible hardship on our nationals, because of the fact they cannot get the materials which they must use to perform their contractural obligations. This is the only country which can supply the equipment needed in the areas where the oil wells are to be drilled. Great Britain has demanded that such equipment be procured from sterling sources and yet at the same time admits that such material does not exist at those sources. That presents a situation which is confiscatory as it affects the interests of American nationals."

Refineries Back on Stream Under Direction of Navy

The nation's oil refineries, strike-bound for three weeks, were slated to be back to full production early this week following seizure by the Navy Department on orders of President Truman issued October 5. Full cooperation of both management and labor was reported by the Navy. Members of the Oil Workers International Union pledged cooperation with the government, but have stated they will continue their fight against cuts in take-home pay.

The 22 oil refineries and pipe line companies on the Texas Coast, which were affected by the strike, have been taken over by Lieutenant Commander F. A. Westphall with headquarters in Houston. Other district offices are at New York, San Francisco and Chicago. Vice Admiral Ben Morrell is in charge of the entire program.

The Navy will sit in as a third party on all wage, or other negotiations of management and labor.

Meantime, pickets have been stationed at entrances to oil leases in parts of the huge Permian Basin fields in West Texas by drilling department members of the Oil Workers International Union (CIO). Less than 20 percent of the 350 wells now being drilled in the Basin will be affected in the event of a walk out.

Calls Schwellenbach Plan "Phony"

Secretary of Labor Lewis Schwellenbach's proposal for arbitration of the oil industry labor dispute was "a phony" and delivered "the most serious blow yet struck against settling labor's problem by arbitration," it was declared October 9 by Senator Joseph H. Ball of Minnesota.

Discussing the federal industrial relations bill now before Congress, of which he is co-author, before the Philadelphia Chamber of Commerce, Ball answered a charge by George Craig, CIO director for the region, that the companies had refused to arbitrate the wage difference with their employes.

"I am glad you brought up the Schwellenbach oil arbitration proposal for it was a phony proposal," he said. "Let's get the facts of the situation correct. The union demanded a 30 percent wage rate increase. Secretary Schwellenbach said to the oil companies 'give your employes the 15 percent and then submit to arbitration the difference between the 15 and 30 percent.'

"Any employer accepting such a proposal would be nuts," Ball declared.

"What disturbs me is that Secretary Schwellenbach, by that proposal, delivered the most serious blow yet struck against settling labor's problems by arbitration and also against the whole principle of collective bargaining. In effect, Secretary Schwellenbach served notice on all employers not to give an inch in bargaining, not to yield to union demands, if there is any chance of the dispute reaching the government. That means the end of fruitful collective bargaining."

Ickes Strikes at Lack of California Conservation

Assertion of American jurisdiction over the continental shelf makes more important than before a final determination of ownership of tidelands, it was declared October 11 by Secretary Ickes.

Asserting that President Truman's recent proclamation is a "great territorial advance," Ickes said there is reason to believe that there are great resources of oil and other minerals in the continental shelf, but added that he has not yet had a chance seriously to consider what, if any, additional administrative set-up will be needed.

Asked directly if the proclamation made more important a Supreme Court determination of tidelands ownership, Ickes said "I don't know whether it adds to the importance, but from my point of view it has always been important. I am perfectly willing to have the court decide who has title."

Ickes also tied the tidelands issue to the question of state conservation legislation in California, the prospects of which, he admitted, are negligible.

"Naturally I would like to see such a law because California is still the second largest oil producing state in the country, and it is more represensible than any other state in not having a conservation law.

Expansion of Conservation Unit Planned by Interior

Expansion of the Interior Department's Petroleum Conservation Division is planned by Secretary Ickes, to carry on from where PAW leaves off, but no legislation expanding the authority of the division is contemplated, it was disclosed last week.

Ickes touched upon the future of the division, but did not go into details, at a news conference October 11 at which he refused to comment on revived rumors that he was about to step down from the cabinet.

Ickes said he does not anticipate that labor difficulties in the industry will necessitate gasoline or fuel oil rationing, although he warned that some local shortages might occur before the situation is straightened out.

Asked about government operation of the Big Inch pipe lines, he said that was not his responsibility and he had not yet been asked for any advice.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED October 13	October 6
Alabama	200	200
Arkansas	76,150	76,350
California	817,500	832,400
Colorado	13,200	14,600
Florida	100	100
Illinois	143,100	134,650
Indiana	11,000	12,850
Kansas	270,600	252,150
Kentucky	25,500	29,200
Louisiana	355,500	355,850
North Louisiana	70,500	70,850
South Louisiana	285,000	285,000
Michigan	42,600	41,200
Mississippi	50,850	51,100
Missouri	100	100
Montana	23,200	26,415
Nebraska	800	900
New Mexico	97,450	97,450
New York	12,800	14,850
Ohio	7,700	7,150
Oklahoma	358,800	383,450
Pennsylvania	33,650	37,300
Tennessee	35	35
Texas	1,187,100	1,187,100
Upper Gulf Coast	258,500	258,500
East Texas Field	177,500	177,500
Rest of Eastern Texas	93,000	93,000
Southwest Texas	193,800	193,800
West Texas	260,000	260,000
North Texas	116,300	116,300
Panhandle	88,000	88,000
West Virginia	7,550	6,650
Wyoming	94,500	96,250
Total United States	3,629,985	3,658,300

IPAA Convention Is in Progress During Week

The sixteenth annual convention of the Independent Petroleum Association of America, held this week in Tulsa, attracted some 600 oil and gas men and had a program keyed to the task of converting the petroleum industry from war to peace, to the need of building a domestic industry capable of supplying all oil required and to create sufficient reserve producing capacity to guarantee self-sufficiency of the nation in any emergency. Price of crude oil, taxation and the Anglo-American oil pact were among the chief topics.

Among those to address the convention were Robert S. Kerr, governor of Oklahoma; Earl Foster, secretary, Interstate Oil Compact Commission; C. Stribling Snodgrass, associate director, foreign division, PAW; William B. Heroy, director, division of reserves, PAW; President Ralph T. Zook; General Counsel R. B. Brown; Major General W. E. R. Covell; Emery Carper of Artesia, New Mexico, and Merle Thorpe, Washington, D. C.

Zook has announced that he will not continue as president and his successor will be named at the meeting. An attendance of 600 was expected by officials.

Housing a Problem at Forthcoming API Meet

On receipt of word that Chicago hotel space might limit attendance at the twenty-fifth annual meeting of the American Petroleum Institute, The OIL WEEKLY contacted API headquarters and found out:

1) That there will be available 1100 rooms at The Stevens Hotel, where meetings will be held;

2) That other Chicago hotels likely can be depended upon for an additional 400 rooms;

3) That 1500 or more out-of-town representatives can be handled; and

4) That all who have applied previously for reservations MAKE NEW APPLICATION IMMEDIATELY.

In this connection, API President, William R. Boyd asked that companies planning to send representatives to the meeting 1) use a minimum number of rooms and 2) "double up" so that each room will accommodate two or more people. An out-of-town attendance of at least 2000 is expected, even on the restricted basis.

Boyd emphasized that no one should come to Chicago for the meeting unless he has a confirmed reservation for hotel space. All hotel applications will be handled by the recently-appointed housing committee. Special consideration insofar as Stevens Hotel space is concerned, will be given to directors, councilors and members of institute committees, Boyd said.

Texas Stocks Rising Fast As October Demand Shown

Demand for Texas oil in November will be 1,990,000 barrels daily, according to a report from the United States Bureau of Mines received by the Texas Railroad Commission last week. It may come from storage or from current production, the bureau pointed out.

Railroad Commissioner Ernest Thompson said stocks in the United States had risen 6.970,000 barrels during the week ending September 29, of which 4,034,000 barrels was Texas oil, according to reports in the trade publications.

"In the month just passed, crude oil in storage has increased by 11 million barrels," Thompson declared. "Thought should be given by the producers and refiners to this large increase, much of which took place before any refineries shut down because of strikes.

"Consideration should be given to the question of how much November demand should be taken from storage. We have worked for years to reduce stocks to minimum working stocks. They were at that point at 211,000,000 barrels. Now the total is 222,387,000 barrels.

"Should we produce so much oil as to constantly increase stocks? That is the big question before the Texas oil industry at its hearing October 17. The Bureau of Mines is merely its estimate of total demand, not an order."

Texas Lifts Shutdown

The Texas Railroad Commission last week recognized the termination of refinery strikes by lifting its shutdown order. The order of September 24, which had been amended three times to cut production further, was reinstated effective October 12.

However, because Commission rules permit operators to produce any days during the month they wish, so long as they do not exceed the number specified in the orders, the net result was to eliminate the effective date (October 12) so far as practical operations were concerned.

This means that most fields will produce for 21 days during October, and that the state allowable will average approximately 1,331,000 barrels daily during the month.

Producers Want Oklahoma Restrictions Continued

Oklahoma Corporation Commission has extended its emergency order cutting daily oil production in West Edmond pool by 50 barrels per well. The order was initiated at the height of the oil strike and its continuance asked by several major operators who warned that if the order was rescinded while storage facilities were filled, pipe line proration might have to be instituted.

The commission will hold a hearing Monday, October 15, on a suggestion that production in all state fields be cut to meet the situation created by the strike.

Corrosion, Cementing Problems and Mud Conditioning Talked by AIME

The Petroleum Division of the American Institute of Mining and Metallurgical Engineers held a series of meetings at Tulsa, Houston and Fort Worth last week. Oil production problems dealing with corrosion, cementing practices, chemical treatment of oil field waters injected into oil sands, mud conditioning, and reservoir studies featured the programs.

Harvey S. Mudd, president of the Institute, and M. L. Haider, chairman of the petroleum division, attended all the meetings and reported on affairs of the petroleum division.

On Friday the North Texas chapter at Fort Worth held a memorial service for AIME men who made the supreme sacrifice in World War II. This was conducted by Dr. J. B. Umpleby, consulting engineer, Dallas.

The Doherty Memorial editorial committee considered means of spending $10,000 awarded to Cities Service Oil Company in memory of H. L. Doherty to promote the art and science of petroleum engineering. The proposed volume on "Petroleum Conservation" was discussed.

Abstracts of those papers where full copies were available follow:

Method for Determining Minimum Waiting on Cement Time

By R. FLOYD FARRIS,
Stanolind Oil & Gas Company, Tulsa

The minimum waiting on cement time in wells can be reasonably accurately predicted by laboratory well simulation tests, but can be more simply determined by observing shut-in pressure on the casing to a maximum value, then multiplying the time from initial mixing to the time maximum pressure is reached by a factor of 1.5. Field tests show that the cement has ample strength to support the pipe and withstand the shock of drilling at that time. A great deal of waiting on cement time may be eliminated if regulations are relaxed and if rigging up and drilling routine is adjusted to fit in with minimum cement waiting time requirements. Use of the method proposed offers the possibility of saving $1200 per well.

Formaldehyde as an Inhibitor of Corrosion Caused by Hydrogen Sulphide

By P. L. MENAUL and T. H. DUNN,
Stanolind Oil & Gas Company, Tulsa

Results of an investigation made to develop a method of combatting corrosion of sub-surface oil well equipment caused by brines containing hydrogen sulphide are discussed. Carbon monoxide, aldehydes, and certain cyanide compounds were found by laboratory tests to effectively inhibit corrosion of steel by sulphide brines. Experiments were made for one year in eight wells in West Texas fields using formaldehyde as an inhibitor. It was found that the inhibitor treatment successfully prevented the severe corrosion previously experienced in these wells, and effected important net savings in operating costs.

Treatment of the brines should be started early because after hydrogen sulphide corrosion starts, it proceeds with increasing severity and its correction becomes more difficult due to the formation of galvanic couples between the iron and steel equipment on one hand and the products of corrosion on the other.

The inhibitor treatment does not prevent electrolytic corrosion due to currents entering the well through the flow line, and insulating flanges should be installed on such wells in addition to chemical treatment.

Precision in Bottom Hole Pressure Measurements

By E. R. BROWNSCOMBE and
D. R. CONLON,
The Atlantic Refining Company, Dallas

Numerous errors encountered in arriving at bottom-hole pressure determinations can be reduced to the neighborhood of two pounds in readings of 4000 pounds.

The errors encountered and the corrections applied follow: 1. Errors due to inaccuracies of reading pressure charts were reduced by using a portable microscope and also by using a long wearing phonograph needle for a marker. 2 Errors caused by the irreproducibility of the pressure element and recording systems were reduced by calibrating the gauge just before and after each run by means of a portable dead weight tester and temperature bath, by making sure that the gauge reached its temperature equilibrium, and by use of multiple well tests and calibrations with frequency curves to show deviation from the mean. 3. Errors caused by fluid head between the reservoir and the gauge were corrected by tubing the well below the top

Wage Cut for Reconversion Is Denied by Labor Board

The National War Labor Board indicated last week that it would not approve any reduction of wage rates because of the reconversion of an employer from war-time to peace-time production.

Without explanation, the board rejected a request of American Car and Foundry Company for authority to reduce its hourly rates for mechanics on the ground that the requirements of its peace-time operations are different from those of the specialized war work on which it had been engaged and the necessity of lowering labor costs if it is to maintain its competitive position in its industry.

The case was the first of its kind to come before the board as a result of reconversion. The decision was signed by the board's public and labor representatives, industry members dissenting.

BAASH-ROSS TOOL CO.

Baash-Ross News

BAASH-ROSS TOOL COMPANY · LOS ANGELES · HOUSTON · NEW YORK

OUR 25th YEAR

Here's what we mean by A SAFETY JOINT SPECIALLY DESIGNED FOR TODAY'S HIGH-TORQUE DRILL STRINGS!

WHY you can run the Baash-Ross "Type E" Autolock Safety Joint right in the drill string ready for *instant* use to reduce pipe loss and simplify fishing jobs . . .

It goes without saying that whenever you run into heaving, sticky or other difficult formations, the time to safeguard your drill string is BEFORE you run it in the hole. And one of the simplest, most efficient ways of doing this is to install a Safety Joint *in the string*– one that will always be ready to release the pipe above the danger zone so that stuck pipe will not jeopardize your entire drill string.

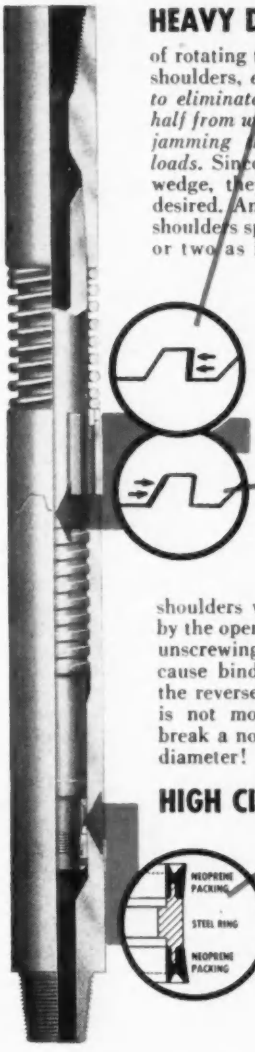
BUT HERE'S THE RUB . . .

Unless the Safety Joint you use is *specifically designed* for transmitting the high torques and twisting impacts of modern drilling operations you'll be safer *without* it. Otherwise, you're likely to find . . .

1. That it is unscrewing when you don't want it to release, leaving part of your string in the hole.

or 2. That when trouble threatens and you do want it to release, it's jammed so tight you can't budge it.

Out of the years of experience Baash-Ross has had in designing advanced fishing and drilling equipment we have incorporated in the Baash-Ross "Type E" Autolock Safety Joint unique operating features *particularly* engineered to meet the severe requirements of today's high-torque drilling strings...



HEAVY DRIVING LOADS

of rotating the bit are taken by *multiple* drive shoulders, *each of which has a 15° undercut to eliminate any chance of the top (driving) half from wedging up on the lower section and jamming the Joint under heavy rotational loads.* Since these undercut shoulders cannot wedge, they are quick to release whenever desired. And the use of *many* of these drive shoulders spaced around the tool—not just one or two as in conventional Safety Joints—assures ample driving surface to carry the heaviest drilling torques without failure. In addition, their staggered pattern permits makeup in just *one* position, eliminating risk of faulty connection.

REVERSE ROTATION

is frequently necessary in drilling operations. And with the "Type E" you can carry out all normal reverse-rotation operations without loosening the Joint because of the spring-loaded shoulders which will not loosen until desired by the operator. Since reverse rotation is in an unscrewing direction, slope here does not cause binding. Yet when release *is* desired, the reverse torque needed to break the Joint is not more than HALF that required to break a normally made-up tool joint of equal diameter!

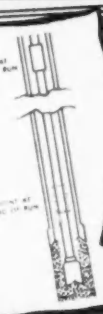
HIGH CIRCULATION PRESSURES

can be maintained continuously, *without leaks* because of this unique circulation pack-off—*another vital drilling feature.* Not only is the seal pressure-tight, but it is so designed you can unscrew the Joint for *six* full turns without losing fluid seal. This permits maintaining full circulation even while releasing!

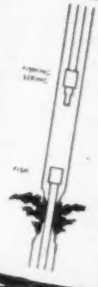
USE THE "TYPE E" LIKE THIS . . .

Where formations have a tendency to cave or heave, place the Joint in the drill string far enough above the danger point so that it will still be in the clear when the run is completed. Or for maximum recovery use two Joints—one a short distance, the other a considerable distance above the danger zone. Then, whether the pipe sticks just after running in a new bit, or near the end of the run, maximum recovery is assured!

Another important application is in drilling out operations. Here the Joint is located so that it will always be in the protected zone above the shoe. Then, should the pipe stick in the open hole below the shoe, loss is reduced to an absolute minimum.



And after you have recovered the major portion of your drill string, the bottom half of the Joint attached to the fish enables you to reconnect and release at will with fishing strings by simply using the other half of the Joint as bottom connection on your run-in strings!



THERE ARE MANY OTHER IMPORTANT FEATURES incorporated in the "Type E" that space does not permit describing here. It is available in all popular drill pipe sizes and in all sizes is stronger than the drill pipe on which it is run. Get the full details from your nearby Baash-Ross representative. See page 295 of your composite catalog . . . or write direct.

(Leased in U. S. A.–Sold for export only.)

of the reservoir and making sure that the gauge was set next to the top of the reservoir. 4. Pressure gradients between the reservoir and well bore were reduced by running extended build-up curves and extrapolating these curves to determine reservoir pressure. A 24-hour shut-in period may be misleading in measuring true reservoir pressure.

On wells which open new fields, the true bottom-hole pressure is useful in determining reserves, etc., and well worth the necessary precautions mentioned.

Late Developments in Mud Analysis Logging

By OTT PIXLER,
Baroid Sales Division, Houston

Analysis of gas and oil shows in drilling mud can be an aid in interpretation of electric logs. By using careful mud analysis, much coring of softer streaks can be eliminated. To understand fully the mud analysis log, one must take into account such factors as rate of penetration, mud properties, coring, and reservoir rock characteristics as related to the "flushing effect." The presence of methane gas has recently been determined by use of the difference in readings between the total combustible gas and the higher molecular gas reading. This permits the zones of low methane content to be condemned, other factors being equal. Mud analysis logging is another tool that the operator can make more use of in order to fully understand well conditions.

Electrolitic Model and Its Application to Study of Recovery Problems

By H. G. BOTSET,
Gulf Research and Development Company, Pittsburgh, Pennsylvania

The electrolitic model has won its place as a tool in determining the pattern of a water-flood or recycling operation. In a few days and at negligible cost the qualitative comparison of the effect upon recovery of the variations in the distribution and rates of operation of input and producing wells in a given field can be had. Also edge-water encroachment can be determined by surrounding the entire field with an electrolite.

By setting up a camera beneath the equipment and taking pictures at various intervals, the progress of a flood or gas drive could be analyzed. By simple measurements and calculations, the percent recovery was obtained qualitatively as a function of the total input.

Performance of Distillate Reservoirs in Gas Cycling

By W. HURST and
A. F. VAN EVERDINGER,
Shell Oil Company, Inc., Houston

With the discovery of an increasing number of gas distillate fields in the Gulf Coast, engineers have had occasion to give more thought to the performance of these reservoirs. "Parallel flow" was defined as flow along homogeneous bedding planes and is analogous to the flow of electricity in an electrical circuit consisiting of different resistance paths but with the same voltage drop.

In order to compute the effect on recovery efficiency of the position of the wells, the area of a field is considered to be made up of rectangles, each rectangle containing one input well in the center and two producers located symmetrically with respect to the input well. Formulae are given from which to obtain the pressure and streamlines in a steady state flow. A method is devised to compute rapidly the successive positions of the dry gas front. In the event the field is of an irregular shape, pressure and streamlines can be obtained by a potentiometric electrical model study. By using the concept of "parallel flow" and the results obtained by mathematical analysis or by electrical model study for a homogeneous formation, the effects of different permeabilities and of the location of the wells can be established. From these studies it is apparent that the efficiency of recycling is profoundly influenced when differences in permeability are taken into consideration.

MIT to Conduct Special Research in Gas Turbines

Gifts totalling half a million dollars for establishing a gas turbine laboratory at Massachusetts Institute of Technology for graduate instruction and fundamental research in this field of engineering, have been announced by Dr. Jerome C. Hunsaker, head of the departments of aeronautical and mechanical engineering.

Recent advances in gas turbine design indicate significant possibilities for the future and emphasize the need for specialized technical studies and the discovery of new techniques required in the construction of machines operating at extremely high speed, high temperature, and high compression. The institute's new laboratory equipment will include a supersonic wind tunnel and unique facilities for research on the elements of compressors, combustion devices, jets, and gas turbines.

Effect of Arsenates on the Viscosity of Drilling Muds

By B. C. CRAFT and C. M. MONCRIEF,
Louisiana State University,
Baton Rouge, Louisiana

Experiments with various arsenate compounds were conducted in an effort to discover a drilling mud with low viscosity and low water loss. A bentonite clay drilling mud when treated with tetrasodium pyroarsenate resulted in substantially the same reduction in viscosity and water-loss as when treated with the complex phosphates. The complex arsenate showed a slightly higher reversion after heating. The other arsenates showed poor viscosity-reducing properties. Since the arsenates are highly toxic, their use would be limited in actual practice. Further experimenting along these lines may produce results acceptable to the industry.

Application of Statistical Methods to Data of Porosity and Permeability of Dolomitic Limestone

By A. C. BULNES

Porosity and permeability data of limestone cores from the Fullerton and Wasson fields of West Texas were examined from the viewpoint of statistics. The Fullerton porosity distributions, by wells, vary from zone to zone and in general depart from the normal form. The Wasson data show less variation in these respects. Permeability distributions are incomplete because a large fraction of the assemblages have values lower than are customarily reported, but they indicate similar variations and non-uniformity.

Distributions of permeability among cores of equal porosity appear to vary in a systematic and continuous manner as the porosity varies. The same is true of the porosity distributions of cores with the same permeability.

The Gram-Charlier series is employed to fit the distributions.

New Technique for Determining Porosity of Drill Cuttings

By M. A. WESTBROOK and
J. F. REDMOND,
Shell Oil Company, Inc., Houston

The porosity of drill cuttings was determined by using a ten cubic centimeter sample of cuttings, each larger than No. 6 screen size. A porous plate was used to remove excess water in order to find the bulk volume of such a large number of small parts. The sample was handled very carefully and kept covered at all times to prevent evaporation. A check on these experiments was provided by taking a core of known porosity and breaking it up to similate drill cuttings and then the porosity on these "cuttings" was run. A curve of core sample porosities against cutting porosities was drawn and the values were duplicated.

A Neutron Method for Measuring Saturations in Laboratory Flow Experiments

By E. BRUNNER and E. S. MARDOCK,
Shell Development Company,
Emeryville, California

A method of measuring oil saturations in cores or sand packs by neutron scattering permits local saturations to be measured in a core enclosed in a steel pressure vessel without interrupting the flow. Calibration data and a saturation distribution measurement obtained with the apparatus are included by way of illustration. In a beam of neutrons there is a radiation that is very penetrating and moreover its scattering by substances containing hydrogen, such as oil, is qualitatively different from that occasioned by other materials. Neutrons are particles with no electric charge and with a mass approximately equal to that of the proton, the nucleus of the hydrogen atom. They are believed to be constituents of the nuclei of all atoms except those of hydrogen and are released in many nuclear disintegrations. A convenient source of neutrons is an intimate mixture of radium and beryllium. The alpha particles from the radium and its disintegration products cause the ejection of neutrons from the nuclei of the beryllium atoms. Such a neutron source produces also much gamma raditation which may disturb the apparatus used to detect the neutrons; but for the present and some other applications, the advantages of availability, small size, and constancy outweigh this disadvantage.

Production and Refinery Runs at New Lows as Full Effects of Strikes Felt

Both refinery runs and crude production in the United States were at new lows for the postwar period in the week ended October 6, as full effects of the strikes were felt.

Crude output averaged 3,621,000 barrels daily, down by the great amount of 736,000 barrels from the previous week's rate and 1,071,000 barrels a day or 22.8 percent less than the 4,692,000 barrels daily production in the corresponding week last year. The new production rate was more than 1,250,000 barrels per day less than the wartime peak of 4,944,000 barrels daily reported in mid-July, this year.

Crude runs to stills averaged 3,409,000 barrels daily in the week of October 6, down 403,000 from the week before and 1,133,000 barrels daily or 24.9 percent less than the 4,542,000 barrels refined per day in the like week last year.

Stocks of crude oil had piled up in large volume in the week ended September 29, when they rose from 215,417,000 to 222,387,000 barrels, an increase of nearly 7 million barrels. They were then at practically the same level as a year previously.

Because of the nation-wide refinery strikes and shutting down of plants, production of all principal products decreased greatly and it was necessary to draw heavily on stocks.

Gasoline production dropped to 10,612,000 barrels for the week from 11,913,000 the previous week and 14,545,000 the week before that. At the new low rate, production was 26 percent under that of the comparable week last year. Stocks of finished and unfinished gasoline were reduced from 79,552,000 to 74,608,000 barrels during the week, a withdrawal of nearly 5 million barrels. But they still were about 6 million barrels, or nearly 9 percent, larger than a year previously.

Civilian grade stocks were lowered 2,776,000 barrels, from 48,204,000 to 45,428,000 barrels, and the latter amount compared with 30,447,000 barrels of civilian grade on hand a year previously. Military and other stocks of gasoline came down from 31,348,000 to 29,180,000 barrels, a drop of over 2 million barrels, and the new total compared with 38,138,000 barrels held on the corresponding date a year ago.

Gasoil and distillate fuel oil production of 3,517,000 barrels in the week of October 6 was 423,000 less than in the previous week and 1,153,000 barrels or nearly 25 percent less than the 4,670,000 barrels produced in the comparable week last year. Stocks normally are increasing at this time of the year, but they came down 1,341,000 barrels during the week to 42,348,000 barrels, and that amount was approximately 2 million barrels, or 4.6 percent, less than was held a year before.

Residual fuel oil production dropped to 6,435,000 barrels during the new week, a decline of 612,000 from output the week before and 2,297,000 barrels or 26 percent less than output in the comparable week last year. Stocks declined 794,000 barrels to 46,059,000, and that amount was 18,650,000 barrels or 28.8 percent less than the 64,709,000 barrels held October 7 last year.

Oil, Gas Session Set

The annual membership meeting of the Kansas-Oklahoma Division, Mid-Continent Oil and Gas Association, will be held October 26 in the Tulsa Building, Tulsa. The annual meeting of the exectuive committee of the Kansas-Oklahoma Division will convene immediately after the adjournment of the membership meeting.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[5]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 8
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,162	10–28	64,744	10– 7
1945	[1]4,944	7–14	[5]5,140	8–18	224,079	6– 2	99,012	3–24	43,689	9–29	56,074	1– 6
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 3
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–13
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–18	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	3,621	10– 6	3,409	10– 6	211,813	8–25	74,608	10– 6	26,483	3–17	38,548	5–26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,380
January 29	4,400	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,018	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14.117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,430	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 2	4,859	4,804	224,079	15,317	88,696	4,857	29,819	9,437	39,022
June 9	4,853	4,827	221,552	15,256	87,896	4,842	30,339	9,382	38,996
June 16	4,888	4,915	221,932	15,132	87,504	5,342	30,397	9,252	39,482
June 23	4,898	5,002	220,974	15,367	87,462	5,014	31,761	9,558	39,893
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 7	4,886	5,006	217,250	15,082	86,329	4,875	33,667	9,238	40,754
July 14	[1]4,944	4,945	216,355	15,349	85,401	5,197	34,804	9,337	41,489
July 21	4,944	4,927	218,108	15,430	85,930	5,090	35,458	9,071	42,480
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,892	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 1	4,876	4,685	215,169	14,904	84,218	5,030	40,859	8,528	46,807
September 8	4,518	4,640	213,721	14,853	85,230	4,478	42,189	8,240	47,871
September 15	4,538	4,616	214,480	14,871	85,209	4,855	43,507	8,188	48,470
September 22	4,528	4,499	215,417	14,545	82,901	4,589	43,620	7,928	47,601
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 6, 1945	**3,621**	**3,409**	.....	**10,612**	**74,608**	**3,517**	**42,348**	**6,435**	**46,059**
October 7, 1944	4,692	4,542	[5]222,390	14,340	68,585	4,670	44,397	8,732	64,709
Change:									
In week	—736	—403	+6,970	—1,301	—4,944	—423	—1,341	—612	—794
In year	—1,071	—1,133	—3	—3,728	+6,023	—1,153	—2,049	—2,297	—18,650
In year	—22.8%	—24.9%	.....	—26.1%	+8.8%	—24.7%	—4.6%	—26.3%	—28.8%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, September 30, 1944.

1216-Mile Line from Hugoton Gas Field To Midwestern Markets Is Projected

Application for another long-distance pipe line was filed with the Federal Power Commission last week by the Michigan-Wisconsin Pipe Line Company.

The company would build a 1216-mile, 22 and 26-inch line from the Hugoton gas field in Oklahoma to markets in Missouri, Iowa, Illinois, Wisconsin, Indiana and Michigan, with its ultimate terminus near Detroit.

Initially, only about 1076 miles of the line would be laid, 816 miles of it 26-inch pipe and the remainder 22-inch. The estimated cost of the initial construction is $49 million, with additional construction during the first four years of operating bringing it to $70 million.

The initial capacity of the line out of the Hugoton-Panhandle fields would be 150 million cubic feet daily, but through the use of the Austin and other gas storage fields in Michigan, a maximum day's requirements in excess of 630 million cubic feet could be supplied by the fully completed system.

It is planned to begin construction about March 1 and to complete the initial installation before October 31, 1947. The gas supply for the line would be purchased from reserves in the Hugoton-Panhandle fields in Texas and Oklahoma owned and controlled by Phillips Petroleum Company.

The commission on October 9 dismissed, on the ground that it is without authority under the Natural Gas Act to grant the relief requested, a complaint of the Mississippi Power and Light Company against rates charged by the Memphis Natural Gas Company for gas delivered from June, 1938, to July, 1943.

FPC Postpones Hearing on Texas-Ohio Natural Gas Line

The Federal Power Commission has postponed until January 15 the hearing scheduled for October 15 on the Metropolitan Eastern Corporation's application for authority to construct 825 miles of 18-inch natural gas pipe line from the Carthage field, Texas, to Hamilton, Ohio.

The postponement was ordered on petition of the National Coal Association and the United Mine workers of America, and in response to Metropolitan's request for more time in which to prepare data and continue certain negotiations.

The proposed line, with its facilities and a dehydration plant, will cost about $23,500,000 and would have an initial daily capacity of 140 million cubic feet of gas.

The commission has called a hearing for October 22 on the application of Tennessee Natural Gas Lines, Inc., for construction of 14 miles of line between the facilities of the Tennessee Gas and Transmission Company and the Nashville Gas and Heating Company.

A supplemental application, seeking authority to construct the necessary facilities and to transport and sell additional quantities of natural gas through and in relation to its new 24-inch pipe line between the Carthage and Monroe gas fields, was filed with the commission last week by the United Gas Pipe Line Company.

Great Lakes Contracts for 800 Miles of Pipe Lines

Contracts have been let by Great Lakes Pipe Line Company for the laying of its 800 miles of lines to implement and expand its present supply system. The project includes laying of an eight-inch products line from Barnsdall, Oklahoma, to Kansas City, Missouri, and an eight-inch extension from Kansas City to Omaha, Nebraska, Sioux City, Iowa, and Sioux Falls, South Dakota.

O. E. Dempsey Construction Company, Tulsa, has contract for the southern section from Barnsdall to Independence, Kansas; Oklahoma Contracting Company, Oklahoma City, from Independence to Paolo, Kansas; and Midwestern Engineers, Tulsa, from Paolo to Kansas City, Missouri.

On the northern section contracts were awarded to Williams Brothers Corporation, Tulsa, for 58 miles north from Omaha to the Missouri River; Midwestern Engineers, 58 miles north from the Missouri River to Sioux Falls; and C. W. Sternberg, 58 miles south from Sioux Falls.

East Texas Lines Laid for Arkansas-Louisiana Firm

Gathering systems are being constructed in the Harleton field, Harrison County, and in the Carthage field, Panola County, East Texas, by Anderson Brothers, Houston pipe line contractors, for Arkansas-Louisiana Gas Company. The Harleton system consists of four and six-inch line, while the Carthage job consists of 18½ miles of 4, 6 and 8-inch pipe.

Anderson Brothers also are laying 8300 feet of eight-inch submerged pipe across Daingerfield Lake, East Texas, to the Lone Star steel plant, for Arkansas-Louisiana.

Near Shreveport, Anderson Brothers are assisting Arkansas-Louisiana in overhauling five submerged lines across Red River.

Skelly Asks for Bids on Gas Lines in Oklahoma

Skelly Oil Company has asked for bids to lay 45 miles of natural gas pipe lines ranging from 4 to 22-inch in size as a gathering system for its 32 producers in the Guymon area of the Hugoton gas field, Oklahoma.

The system will have a maximum capacity of 70 million cubic feet of gas daily and the line will connect with Cities Service Gas Company's main line from the Hugoton field into Kansas. The work is expected to be completed 60 days after contract is let.

Three Directors Elected To Tennessee Gas Board

Three directors have been elected to the board of the Tennessee Gas and Transmission Company.

The new directors, all residents of Texas, are, Hervey M. Amsler, vice president of the Richrock Royalty Company, and Ardon B. Judd, vice president and general manager of Republic Supply Company, both of Houston, and Robert K. Hanger, lawyer and member of the firm of Cantey, Hanger, McMahon, McKnight and Johnson, Fort Worth.

Houston Firm Contracts To Lay Pennsylvania Line

Anderson Brothers of Houston, pipe line contractors, have been awarded contract for the construction of seven miles of eight-inch natural gas line near Oil City, Pennsylvania, for the United Natural Gas Company.

THE UNIVERSITY OF TEXAS

18th Public Auction Sale of Oil and Gas Leases

Tracts located in Andrews, Crane, Crockett, Pecos, Reagan, Ward and Upton counties; date of sale, November 2, 1945; to be held at the Stephen F. Austin Hotel, Austin, Texas, to begin at ten o'clock A.M.

For additional information write to the Secretary, Board for Lease of University Lands, University Station Box 2125, Austin 12, Texas.

FOR THE LONGEST STRINGS OF "BOTTLE-NECK" PIPE

BJ HAS BUILT A *New* ELEVATOR

A new 200 ton capacity type MGG Elevator, capable of handling 20,000 foot strings of 4½" externally up-set drill pipe is now ready for use. It has the recommended API safety factor of four to one and is basically similar in design to the type "G" Elevator — *which has never dropped a string of pipe.*

The MGG has been "heavied-up" throughout, to safely take the increased load of the longest strings of pipe while maintaining the same smooth features of operation of all BJ Elevators.

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Borneo Fires Are Extinguished After Consuming $10 Million Worth of Oil

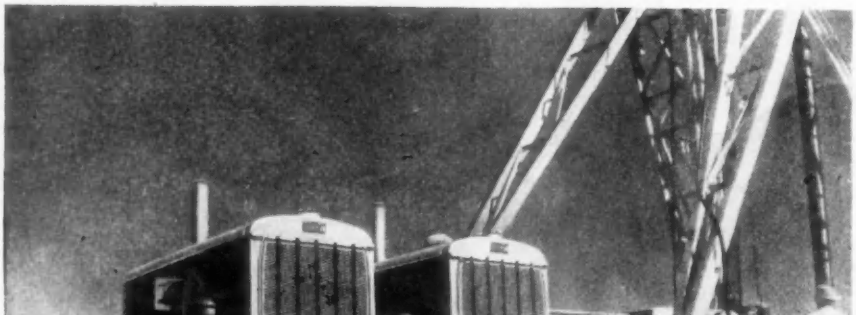
With the assistance of two Houston oil well fire fighters, H. L. Patton and his son, O. L. Patton, the oil fires of Borneo have been extinguished after raging for three months and consuming an estimated $10 million worth of petroleum.

The fires were in the field at Seria, in Brunei, tiny British colony on the Borneo west coast. The field was discovered only a few years ago and is considered the richest in the British section of Borneo.

Seria's 37 wells were fired by the Japs when Australian troops landed at Brunei. The Australians succeeded in snuffing out 25 of the flaming wells, but the other 12, worst of all, could not be reached. When the British Malayan Petroleum Company, subsidiary of Royal Dutch Shell, sent for the Pattons.

The Houston fire fighters swung a tube into the well opening and forced mud down the hole. This process put out the fire and left the wells little damaged. All 12 are now capped and oil men say they will be flowing again soon.

At Seria, as at Tarakan, in Dutch Borneo, oil production is being held up because of the lack of storage. About 60 wells have been restored at Tarakan.



On this drilling rig, two Model ME-66 Murphy Diesels provide 300 HP continuous, 360 HP intermittent, at 1200 rpm.

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218A

Dr. Eby to Make European Tour for The Oil Weekly

Dr. J. Brian Eby of Houston, consulting geologist and geophysicist, will leave New York by air October 21 for England, Germany and other European countries, where he will make a study of oil fields and production for THE OIL WEEKLY.

Dr. J. Brian Eby

Eby, a former newspaper man, represented THE OIL WEEKLY at the International Petroleum Congress in London in 1933 and has published a number of articles relating to the geology, production and economics of European oil fields. He is regarded as an authority on German petroleum resources, having toured oil centers in that country following the London meeting. Eby is an active member of AIME, AAPG, American Association for Advancement of Science, Society of Exploration Geophysicists, Royal Society for the Encouragement of Arts, London, American Geophysical Union, and Texas Academy of Science.

After graduating from Johns Hopkins in 1918, Eby joined the U. S. Geological Survey. He was awarded his doctorate in geology in 1922 by Johns Hopkins. In 1925 he joined Shell Oil Company and served for several years as geologist in charge of its Texas and Louisiana geophysical department.

British Columbia Reports Showings of Oil and Gas

Discovery of natural gas and evidences of petroleum in the Boundary Bay region of British Columbia has been reported to the Provincial government by James Wordworth Perrin, who holds a lease on 589 acres in the area.

Perrin's declaration was made at the time he applied for extension of his lease, which he has held since 1942. A five-year extension granted October 20 permits him to prospect and develop any resources of petroleum and natural gas.

☆ Oklahoma

McClain Tests Get Shows; Tennery Well Is Plugged

Deep McClain tests get shows; Tennery well plugged; new horizon given Sancho district; 2 producers noted for Cheyarha extension; shallow Arbuckle show registered southeast of Aylesworth; Cimarron County wildcat improves with testing.

McClain County: Interest was again focused in the deep production possibilities along the eastern rim of the Anadarko Basin as The Carter Oil Company's Hawkins 1-C, C NE NE 34-6n-3w, southeast of Criner, recovered 120 feet of oil-cut mud on drill-stem test with packer set at 7857 feet. Cores were cut from 7988-94 feet, recovering 5 feet showing slightly 1 foot of fine sand showing considerable oil, and 14 inches of sandy lime with spotted staining.

Carter's Mottinger 1, C NW NW 5-6n-3w, also near Criner, cored from 9932-51 feet, recovering 18 inches of lime with a slight oil odor. Hunton top was 9905 feet. Carter is the most active operator in the McClain area and already has developed deep Ordovician Wilcox production near Washington and Noble. The Hawkins test is about 5 miles northeast of Cities Service Oil Company's Lawson 1, discovery well for the North Lawton pool and deepest producer in Oklahoma.

Canadian County: J. E. Trigg of Oklahoma City failed in his attempt to open a new producing area 2 miles north of El Reno when he abandoned Tennery 1, C NE SW 22-13n-7w, after the well previously had recovered about 3 million cubic feet of gas on a drill-stem test in the second Wilcox sand between 10,583-645 feet. While no oil shows were reported, cores indicated the sand had good porosity. The well was running low regionally, and operator decided the show was not sufficient to warrant further drilling at such depth.

Bryan County: Gulf Oil Corporation has an interesting test at Southern Life Insurance Company 1, NE SE SE 29-6s-7e, southeast of the Aylesworth pool, which hit shallow Arbuckle lime and tested 3 million cubic feet of gas per day from 735-37 feet. Drilled to 744 feet and put on swab, the well made about 200 feet of fluid, 10 percent oil. Amerada Petroleum Corporation recently completed a gasser in Sect. 27 at 690 feet. Gulf is drilling deeper.

Seminole County: Forging ahead in a revival which has developed considerable new oil in the past few months, the county chalked up another success when the Chandler-Hill Company, which has been completing a series of good Booch sand wells in the Sancho district west of Wewoka, was on the point of opening a Wilcox sand well and a new horizon at Killingworth 1, NE NE SW 9-8n-7e. Operator cored from 4206-16 feet, recovering 8 feet of saturated sand, and was preparing to test and complete. The well is midway between the Wewoka and Bowlegs pool and should result in considerable drilling.

Ashland Oil and Refining Company has its best well in Oklahoma at Land Owners Royalty 1, NE NW NW 8-9n-7e, offset to Ilco Corporation's Cheyarha pool extension. The well is producing 600 barrels of oil daily from Booch sand at 3556-68 feet. Ilco's Allred 2, SE NE NW 8-9n-7e, offset to Allred 1, flowed 320 barrels of oil in 24 hours through casing from Booch sand at 3528-55 feet. Lake Oil Company has 2 locations in the area.

Cimarron County: The Pure Oil Company's Oklahoma State 1, SE SE NW 1-5n-8ecm, northeast of the Keyes gas field, continues to clean out near bottom and was last reported making about 90 barrels of oil daily for the first possible commercial oil production in the Oklahoma Panhandle. It drilled to 5160 feet, set pipe at 4779 feet, and has been testing the Cherokee sand between 4786-4890 feet. Oil tests 39 gravity.

Cleveland County: Mid-Continent Petroleum Corporation's Westermier 1, NEc 35-10n-3w, newest producer in the South Moore pool, gauged 805 barrels of oil through 1½-inch choke in its second 24-hour gauge. It was completed as a Bartlesville-Burgess sand producer, making 718 barrels of oil on initial 24-hour gauge through casing perforations between 7850-59 feet.

In the West Moore pool, Mid-Continent's Tubbs 5, SW NE SE 29-10n-3w, was drilling at 8732 feet; its Carr 1, SW SE NW, Sect. 29, was below 6730 feet and Turk 3, SW NW NE, of the same section, was below 4908 feet.

☆ Kansas

Helium Strike Registered; Rooks May Get New Pool

Helium gas strike registered pool opener looms in Rooks County; wildcat has oil shows in 7 lime zones; Manteno discovery flows 400 barrels of oil daily; Butler, Barton counties have discoveries.

Rush County: El Dorado Refining Company's Urban 1, NW NE NW 21-16s-17w, about 15 miles northwest of the Otis pool, has definitely been identi-

Wells Completed in United States in Week Ended October 13, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS This Week	Last Week	Cumulative This Year	Cumulative Last Year
Alabama													27	30
Arizona														6
Arkansas	2				2				1	1	3	4	148	180
California	34	2		3	39				2	2	41	45	1,710	1,610
Colorado									1	1	1	4	34	22
Florida												1	12	2
Georgia													6	7
Illinois	18			8	26	1	2		5	7	34	47	1,525	1,546
Indiana	2			3	5						5	9	267	267
Iowa													1	2
Kansas	12	11	1	4	28	2	1		5	6	36	43	1,330	1,347
Kentucky	6	1		2	9			1	2	3	12	16	475	626
Louisiana	11	4		3	18	1	1		1	2	21	17	803	594
North Louisiana	3	4		3	10		1		1	2	12	10	320	214
South Louisiana	8				8	1					9	7	483	380
Michigan	7	2		11	20		2		15	17	37		609	527
Mississippi	3	1		3	7				3	3	10	7	303	153
Missouri									1	1	1		41	35
Montana												3	166	267
Nebraska													3	14
New Mexico	5				5				1	1	6	10	326	312
New York	15		10		25						25	25	902	988
North Carolina													1	
Ohio	3			1	4						4	7	728	768
Oklahoma	26	2		12	40	2	1		5	6	48	58	1,874	1,414
Pennsylvania	28	7	15		50						50	51	2,316	2,411
Tennessee													3	9
Texas	75	13	2	19	109	5	6	2	30	38	152	180	5,764	4,776
E.Tex.Bor. Co.'s		3			3			1		1	4		80	26
E. Texas Field														4
Rest of E. Texas	4				4	1	1		4	5	10	5	181	223
North Texas	17	1	2	7	27		3		7	10	37	69	1,410	1,102
W. Central Tex.	3				3	1	1		1	2	6	5	372	320
West Texas	20	1		1	22	3			8	8	33	33	1,382	1,243
Tex. Panhandle	4	6			10						10	18	491	224
G. Coast, Upper	6	1		3	10				3	3	13	23	560	458
G. Coast, Lower	17	1		6	24		1	1	5	7	31	15	824	739
Southwest Texas	4			2	6				2	2	8	9	391	354
S. Central Tex.												3	73	83
Utah														1
West Virginia	3	8		2	13						13	8	623	749
Wyoming												5	121	134
Total U. S.	250	51	28	71	400	11	13	3	72	88	499	540	20,118	18,797

* Includes distillate wells. † Includes salt water disposal wells.

fied as a new helium gas discovery. The wildcat was completed for about 3 million cubic feet of non-inflammable gas several weeks ago, producing from the Arbuckle lime between 3521-35 feet. Analysis shows the gas to contain 36 percent helium and 64 percent nitrogen. Well is shut in pending government's decision to take it over. The government operates a helium gas plant in the Otis pool which is shut down. Such wells usually go dead in 4 to 6 months after being put on the line.

Rooks County: Seven miles southwest of the Barry pool, Keyes Drilling Company appears to be opening up a new area at Meil 1, NE NE 20-9s-20w. Producing Arbuckle section at 3849-65 feet was acidized with 1000 gallons and was last reported showing for about 5 barrels of clean oil an hour on swab. Testing continues.

Ellis County: Seven zones showing oil are reported in Cinoil Company's Beren 1, SE NW NW 1-14s-16w, wildcat test 1½ miles west of the Gorham pool. Zones showing are in the Lansing lime between 3158 and 3342 feet. Operator tested the lowest zone to recover about 3 barrels of oil an hour and continues testing higher zones.

Ness County: Chalmette Petroleum Company's Bowman 1, NW NW NW 31-19s-25w, Manteno pool opener about 8 miles south of the Aldrich pool, appears to be one of the best Kansas discoveries for the year. Physical potential test rates the well at 400 barrels of oil daily, natural, from the Mississippi lime at 4453-83 feet. The well was drilled on surface geology. Recovery is expected to be between 8 to 12 thousand barrels per acre.

Butler County: K. T. Weidman has a pool opener at Hoard 1, NE SE SW 28-29s-8e, about 6 miles southeast of Latham. Topping Mississippi lime at 2808 feet and after drilling to 2812 and acidizing with 1000 gallons, the well pumped 25 barrels of oil daily with a slight trace of water. The wildcat is at 2844 feet, total depth.

Barton County: About 5 miles southeast of the Ainsworth pool, C. Elmer Ash et al's Mosher 1, NE NE SW 35-17s-13w, is a possible pool opener from Arbuckle lime. Topping that formation at 3342 feet and after setting pipe and making production test, the wildcat had an 800-foot fluid fil-up, half oil and half water. Operator was squeezing for a water shut off.

Russell County: Skelly Oil Company's Schulte 1, NE SW NW 20-13s-15w, east of the Atherton pool, apparently opens a new field of undetermined significance. Operator drilled to the Arbuckle, 3289 feet, total depth, and tested salt water. The hole casing was perforated opposite Lansing lime at 3023-43 feet and after acidizing and put to pumping the wildcat tested 53 barrels of oil plus 18 barrels of water in 15 hours. Testing continues.

Bahamas Rights Granted

A number of companies have been granted rights to search for oil in the Bahamas. The oil board said that as the allocations were made on a six-month option basis the names of the companies granted concessions would not be released.

☆ West Texas

Silurian Horizon May Be Important TXL Field Pay

Silurian oil horizon may attain important proportions as third pay in the TXL field; Ordovician prospect in Martin pool, Andrews County, logs second oil zone in Simpson; Midland County's first strike will be gas-distillate producer.

TXL Field: The Texas Company's Thomas 1, C NW NE T&P Ry. 8 and ½ mile east of the Ellenburger discovery, flowed 33 barrels of 35.3-gravity oil, with gas volume rated at 960,000 cubic feet daily, during the last ½ hour of a drill-stem test of Silurian saturation at 8330-8440 feet. Commercial production from the Silurian was indicated in the 2 completed Ellenburger wells 24 miles apart, and flowing production has been recorded by 3 structurally high wells. Dual completions are in prospect.

Andrews County: Humble Oil & Refining Company's Parker 1, southwest offset to the Martin pool Clear Fork discovery, recovered 4 feet of oil-saturated sand in core at 8895-8902 feet, and was to resume coring. This prospect recovered 8500 feet of 33.7-gravity sweet crude when tester was used in the McKee sand at 8720-8808 feet, being the first production for the county from this zone.

Humble's Means 88-X, Means field Ellenburger project, was drilling dry lime at 13,911 feet. The Silurian, topped at 13,230 feet, was the last geological marker made public.

Pecos County: Bryce McCandless et al's Atlantic-Cordova 1-111, C SE NW H&GN Ry. 111, Block 11, will set pipe for production test after logging broken saturation in Ellenburger at 4175-4277 feet with elevation of 2398 feet. Two drill-stem tests failed to confirm the show. This wildcat is 1⅞ miles northwest of McCandless et al's discovery for the Owego area that flowed oil and water from Ellenburger at 4005-4103 feet and later completed as a gasser at 2970-90 feet.

Midland County: Humble Oil & Refining Company's Buchanan 1, 9 miles southeast of Midland and a failure in Ellenburger at 12,170-12,574 feet, was swabbing 2 to 6 barrels of distillate per hour from Lower Permian perforations at 10,370-10,390 feet. A commercial gas-distillate producer and the first for the county is due to follow additional perforations below and above the initial perforations.

Crane County: The Atlantic Refining Company's University 1-A-31, indicated prolific oil discovery in the Devonian and Ellenburger, has plugged back from 10,435 feet to 10,279 feet, with 7-inch casing at 10,380 feet, for initial test of Basal Devonian saturation through perforations at 8812-69 feet. This wildcat entered the Devonian chert at 7890 feet and showed production at intervals from 7913 feet to the Devonian-Silurian contact at 8895 feet, establishing a record thickness for Devonian pay. The Ellenburger was entered at 10,291 feet and confirmed commercial production in drilling to 10,435 feet. Application to produce from both zones will be given hearing November 8. Nine additional tests are being drilled by the company to forestall lease expirations.

Humble's Cowden 1, 10 miles south by east of the Block 31 area, was drilling lime and chert at 7610 feet, having passed up probable production in the Devonian, topped at 6085 feet. John I. Moore et al's Waddell-Southland 1, which indicated production in the 5900-foot Devonian, was drilling limey-shale at 7670 feet.

Winkler County: Gulf Oil Corporation's Keystone 55-E extended the Keystone-Ellenburger field a mile southeast in flowing 2075 barrels of 43.6-gravity oil initial through ½-inch choke after acid treatment of dolomite at 9963-10,038 feet. This outpost is structurally low.

Upton County: DeKalb Agricultural Association's Burleson 1, ½ mile northeast of McCamey and 3 miles southwest of the McCamey field's Silurian oil discovery, was drilling shale at 8170 feet. This wildcat entered the Devonian at 6324 feet and Silurian at 7040 feet, correlating 43 feet and 29 feet low, respectively. No shows have been reported. Gulf Oil Corporation's Starnes 1-E, J. R. Prater survey and between the McCamey and Crane-Cowden areas, was drilling anhydrite and lime at 6571 feet on Ellenburger contract.

Ector County: Stanolind Oil & Gas Company et al's Scharbauer 3-Q, prospective Clear Fork and Silurian producer on the north edge of the Goldsmith field, was drilling dry Simpson at 8865 feet. The Texas Company's Connell 29, 1½ miles west of the Penwell field, was drilling dry lime at 7560 feet.

☆ North Texas

Jack County Ellenburger Prospect Sprays Oil on Test

Ellenburger prospect in Jack County sprays oil on preliminary test; Archer County pool may produce from Mississippi; large proportion of district's field activity is distributed among numerous small pools; Hildreth field is only major area with an important drilling schedule.

Jack County: Hanlon & Buchanan, Inc.'s J. Moore 1-B, NE of BBB&C Ry. 2, A-1376, and 4 miles east of Hoefle field, made a firm bid for discovery in Ellenburger, topped at 5890 feet, in spraying oil with a good gas blow through tester at 5898-6905 feet. Pipe was set for completion.

Miller-Marine Oil Corporation's Cherryhomes 3, first deep test for the Cherryhomes 5000-foot Basal Bend area, proved dry in the Ellenburger at 6260-6377 feet, and will be plugged back to try for completion in the Bend.

Montague County: Vennex Oil Company et al's Beakley 1, Block 21, M. Garnett survey and indicated flowing discovery for the Belcherville area, cemented pipe at 5708 feet in Ellenburger, topped at 5605 feet and drilled to 5913 feet. Broken saturation in this zone will be tested, while oil flow from the 5300-foot Bend is assured, with production possibilities in lower section at 5533-53 feet.

Cooke County: Sun Oil Company's Allen 1, Sol Gann survey and 1½ miles southeast of the Sivells Bend field discovery, was coring shale at 7428 feet in expectation of encountering the area's deepest oil zone near this level. An oil

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showing in a stray sand at 6293-6300 feet probably warrants setting pipe for a production test, but the Rasure and Beasley zones were disappointing. Cox & Hamon's Davis-Texaco 1, J. C. Johnson survey and an east outpost, was drilling shale at 6780 feet without shows.

Archer County: Benson Bros. et al's Turbeville 1, NW SW Block 49, Harris subdivision and a mile northeast of production, is showing for a pumping discovery from sand at 1437-40 feet, having cemented pipe at 1436 feet.

Manning & Brown, Inc.'s Mahler 1-A, H&TC Ry. 18, Block 1, and ¼ mile east of the firm's recent Ellenburger discovery between the Hull-Silk and Vogtsberger areas, entered the Ellenburger at 5440 feet, and logged saturation in drilling to 5536 feet. Pipe was landed on bottom to complete through perforations.

L. T. Burns et al's Campbell 1, SW SE TE&L Company Sect. 1388 and southwest of the Burns-Benson 4600-foot Bend 2-well pool, entered the Mississippi at 5083 feet, or 65 feet high, and logged saturation in drilling to 5096 feet. Pipe was cemented at 5085 feet to test.

☆ East Texas

High-Pressure Gas in Smith Project Is Non-Inflammable

High-pressure gas in Chapel Hill field Smackover project proves to be non-inflammable; extension due in Calvert shallow area; Hawkins field has 8 active rigs; development of Sand Flat area expanding.

Smith County: Sinclair Prairie Oil Company's Shofner 1, Chapel Hill field and deepest test in the district, was fishing for stuck drill pipe at 13,557 feet. This Smackover project tried to blow out at 13,360 feet, and lost rotary returns when mud was thickened. The high-pressure gas is non-inflammable. Original depth contract was fulfilled at 13,000 feet and deepening operations are financed by sponsors contributing on a day-to-day basis.

Sand Flat: Humble Oil & Refining Company's Roosth-Genevov 1, Daniel Minor survey, flowed 117 barrels of oil on 10-hour gauge through tubing choke from perforations in the Paluxy, topped at 7002 feet and drilled to 7250 feet. The company is starting Griffin 1, Seaborn Smith survey, to try for a mile north extension. Delta Drilling Company has acquired Arkansas Fuel Oil Company's 200-acre lease with 1 pumper for a cash payment and an over-ride.

Hopkins County: Delta Drilling Company's Livingston 1, 5 miles west by south of the Pickton field, was idle for repairs at 5390 feet. This projected Travis Peak wildcat passed up promising oil saturation in the sub-Clarksville, topped at 4017 feet, and retained its high structural position in entering the Woodbine at 4465 feet and Georgetown at 5145 feet with elevation of 460 feet.

Wood County: Humble is operating 8 rotary rigs in the Hawkins field to fulfill its announced plans to complete 45 additional wells before the end of the year.

Robertson County: Hamman Oil & Refining Company's Garrett 1, ½ mile south of the company's Calvert pool and partially separated by 2 failures, logged oil saturation and porosity in the field's regular Basal Navarro sand at 2112-24 feet. This outpost was drilled to 2497 feet, and pipe was cemented at 2105 feet. The company has 6 pumping and 2 flowing wells. The oil is marketed by tank cars and trucks.

Anti-Trust Suit Charges Participation in Cartel

The Department of Justice filed a civil action in the New York Federal District Court October 9, charging General Electric Company, Westinghouse Electric Corporation, two of their subsidiaries and an association jointly controlled by them with violations of the Sherman Anti-Trust Act in the sale of electrical equipment for export.

The government alleged, the two subsidiary concerns, International General Electric Company and Westinghouse Electric International Company, singled out major American firms, including all oil companies, and agreed to fix prices on and allocate between themselves sales of electric equipment to those firms for use outside the United States even though the sales are actually made in this country.

Humble Executive Named Houston Controllers Head

J. R. Mulvey, assistant comptroller of Humble Oil & Refining Company, has been elected president of the Houston Control of the Controllers Institute of America, and W. D. Winston, secretary of the Lufkin Foundry & Machinery Company, was named first vice president. Harry B. Drennan of The Superior Oil Company; S. G. Loy, assistant controller of Humble Pipe Line Company; E. H. Mueller, treasurer of Shell Pipe Line Company, and W. M. Padgett, assistant secretary of the Pan American Pipe Line Company, were chosen directors of the group.

At the annual meeting of the Dallas Control, E. Clyde Seymour, controller of Magnolia Petroleum Company, was named first vice president. J. Norvelle Walker, vice president and controller of Royal Oil & Gas Corporation, was elected vice president of the Philadelphia Control, and the same group renamed Robert G. Dunlop, comptroller of the Sun Oil Company, as a director.

E. S. Worthington, secretary-treasurer of the Wofford Oil Company of Georgia, was chosen secretary-treasurer of the Atlanta Control.

Other oil industry executives who were elected or reelected directors of the controls in their respective cities include: J. A. Goodson, comptroller of Hunt Oil Company, Dallas; William A. Jackson, assistant comptroller of the Standard Oil Company (New Jersey), New York; Robert A. Kroenert, secretary-treasurer of the Great Lakes Pipe Line Company, Kansas City; Roger W. Leason, secretary-treasurer of Emsco Derrick & Equipment Company, and Louis A. Williford, chief accountant and auditor of the Macmillan Petroleum Corporation, both of Los Angeles; George MacDonald, secretary and assistant treasurer of the Gilbert & Barker Manufacturing Company, West Springfield, Massachusetts, and J. W. Watson, assistant treasurer of Shell Union Oil Company, San Francisco.

☆ East Texas Border

Harrison County Due for Harleton Area Activity

Harrison County due for large development in Harleton area; week's wildcat testing uneventful.

Nacogdoches County: Magnolia Petroleum Company's W. L. Harrell 1, William Wray survey, took a 30-minute drill-stem test from 8096-8116 feet with disappointing returns. Recovery was 15 feet of mud with distillate taste, no salt water. A core from 8106-16 feet had recovered Travis Peak sand with good odor of oil. Coring continues below 8120 feet.

Shelby County: Humble Oil & Refining Company is trying to cement a cave in Pickering Lumber Company 1, St. Francois survey, and is now waiting on a cement job. Earlier the well had shown gas and threatened to blow out at total depth of 10,986 feet. Hole is now plugged back to 8122 feet.

San Augustine County: M. E. Davis' C. Thomas, William B. Horn survey, has failed this far to indicate commercial production, and is still testing perforations from 8400-07 feet. Perforations from 9075-95 feet, though acidized with 10,000 gallons, failed to improve the recovery, which was 15 barrels of 40-gravity oil per 24 hours. Total depth is 9290 feet.

Marion County: Texona Production Company has staked location for Turner-Hickey 1, Robert Potter survey, fifth wildcat for the county. Work will be started immediately.

Rogers Lacy's wildcat Scott 1, L. A. McLaughlin survey, is drilling in lime below 4175 feet.

Stewart Oil Company's Brown Estate 1, Joseph Watkins survey, is waiting on orders after running electric log to total depth of 7209 feet. Tops were as follows: Massive Anhydrite 5545 feet, Lower Glen Rose 6013 feet, Dees 5138 feet, Pettit 6592 feet, Lower Pettit 6664 feet, Travis Peak 6740 feet.

Harrison County: Stanolind Oil & Gas Company's Hattie Cole 1, Charles Taylor survey, 9 miles south of Marshall, is drilling below 4275 feet in lime.

Rogers Lacy, whose 4 Harrison wildcats have opened production in the last 3 months, is reported preparing to stake another Cotton Valley or Smackover lime test ½ mile north of Lacy's Tutle 1, on the Tutle acreage, north of Marshall. Lacy is negotiating with Stanolind Oil & Gas for assistance in drilling the well.

H. L. Hunt Oil Company is planning an intensive development program for the Whelan gas-distillate field in the Harleton area. The company has about 10,000 acres in the area, 7900 of which were obtained on a farmout from Gulf. First locations are expected within 15 to 30 days. Placid Oil Company will handle the drilling of the wells.

UMA to Suspend

Delegations of the five member nations of the United Maritime Authority last week set September 2, 1945, as the date of the "general suspension of hostilities" which marks the beginning of the last six months of the organization's authority over world merchant shipping.

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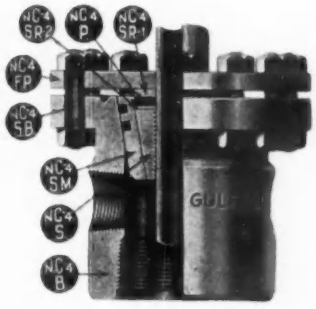

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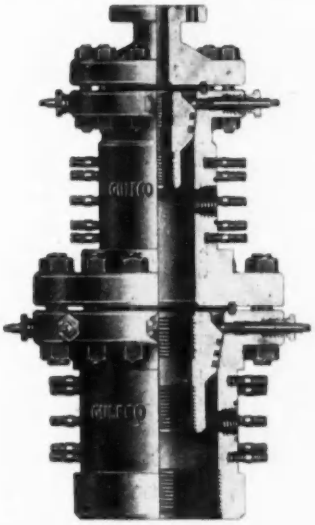

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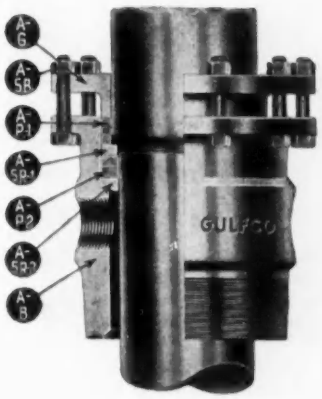

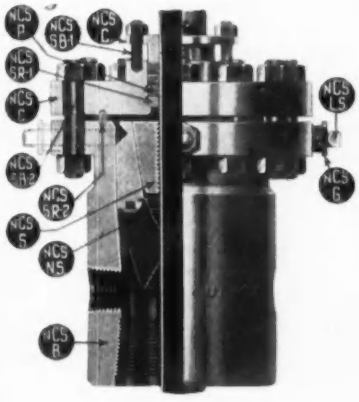

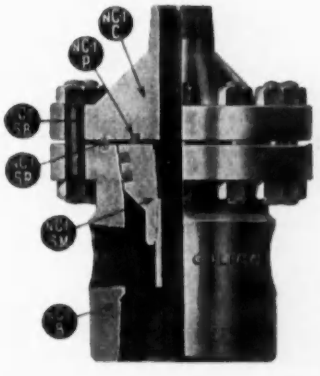

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☆South Central Texas

Atascosa Test Deepened; Bastrop Has Two Failures

Quintana to deepen Atascosa County wildcat; 2 failures reported in Bastrop County; Kerr and Gonzales wildcats drill deeper.

Atascosa County: Quintana Petroleum Corporation is preparing to deepen C. Muil 1, wildcat 11 miles southeast of Pleasanton in the J. C. Mattison survey. This test originally was abandoned at 8965 feet and operator now plans to drill to 10,000 feet.

In the Imogene field, Humble Oil & Refining Company has staked W. M. Avant 1-B in the Galba Fuqua survey.

Bastrop County: John A. Drossos' A. J. Caldwell 1, wildcat 2½ miles east of Elgin, Glasscock survey, has been abandoned in Austin Chalk at 2203 ft.

R. V. Muckleroy's Mrs. Nettie Oshier et al 1, wildcat 3 miles southwest of Cedar Creek, Gage survey, also is a failure in the Austin chalk at 1758 feet.

Gonzales County: Quintana Petroleum Corporation's Anna Spahn 1, wildcat 4 miles northwest of Gonzales, is drilling below 7320 feet in sandy shale.

Kerr County: The Ohio Oil Company's Charles O. Robinson 1, wildcat in Sect. 47, is drilling in gray lime below 4756 feet.

Humble Plans $2,200,000 Office Building Additions

Humble Oil & Refining Company plans to construct two additions to its Houston office building at a cost of approximately $2,200,000. Work will be started immediately on a two-story structure as an extension to the main office building to be located on the site of the courtyard on Polk Street. Foundations will be provided so that seven additional stories can be added to the new structure.

Upon completion of the two-story addition, a 10-story addition to the existing building will be erected at Main and Dallas. At the same time, a tenth story will be added to the nine-story building on Travis Street.

Indian Lands Offered

Sealed bids for oil and gas mining leases on restricted lands of members of the Five Civilized Tribes will be received at the office of the superintendent at Muskogee, Oklahoma, until 10 a.m., November 6. Leases are being offered in Washington, Tulsa, Creek, Okfuskee, McIntosh, Hughes, Seminole, Coal, Murray, Garvin, McClain, Grady, Stephens, Jefferson, Carter and Love counties.

☆Southwest Texas

Jim Hogg Receives Wildcat; McMullen Activity Boosted

Jim Hogg County receives first wildcat in several weeks; activity in McMullen County boosted; Houston independent to drill Duval wildcat.

Jim Hogg County: The first wildcat location in several weeks has been staked in this county. The test is Milam Drilling Company's J. M. Tygart 1 in the El Sordo Grant about 16 miles south of Hebbronville. The test is projected to 5000 feet.

McMullen County: Activity has been boosted with the spudding of several wildcats. Southwest of Calliham, Plymouth Oil Company's Harry Ezzell 1 was drilling below surface casing set at 2000 feet.

John F. Camp's J. W. Atkinson 1, wildcat 2 miles north of the Loma Alta field, was drilling in shale below 2603 feet.

Argo Oil Corporation's H. C. Edrington Estate 8-I, South Campana field, blew out at 2565 feet. Argo's John E. Murphy 1-D, wildcat northeast of the Seven Sisters field, was abandoned at 3148 feet after testing salt water in the Pettus.

Webb County: Coastal Refineries, Inc.'s Bruni Estate 2, wildcat 12 miles south of Mirando City, was coring below 1520 feet.

Duval County: Raymond D. Reynolds of Houston is preparing to drill a 3300-foot wildcat test 21 miles northwest of San Diego. It is the F. D. Lowe 1 in Sect. 74.

☆Lower Texas Coast

Bee County Tests Staked; Refugio Well Is Completed

New wildcats hike work in Bee County; Live Oak County wildcat testing; Hysaw field receives new test; Refugio field well completed.

Bee County: Locations for 2 tests were staked. Mills Bennett of Houston will drill his Martha Berger et al 1 about 2 miles southwest of Tuleta in the J. M. Uranga Grant. Proposed depth is 8200 feet.

Southeast of Cadiz, Sam E. Wilson, Jr., of Corpus Christi staked H. D. Hughes 1 in the Hotchkiss survey. Projected depth is 4000 feet.

Live Oak County: Glenn H. McCarthy is testing C. L. Cartwright 1, wildcat southeast of George West and about 1 mile northeast of the new Hinnant field. The test was drilled to 6014 feet with 5½-inch casing set at 5800 feet. Perforations at about 5720 feet have been squeezed.

Woodley Petroleum Company has located a test in the Hinnant field. It is the Mrs. M. A. Hinant 1 in the Edward Quin survey and is a northeast offset to the Wright & Christie Hinnant 1 discovery well.

Karnes County: Seaboard Oil Corporation of Delaware plans a new test in the new Hysaw field. Location has been made for the E. N. Hysaw 3 in the Seguin survey southwest of the Hysaw 2 producer.

Southern Minerals Corporation continues its development of the Falls City field by staking location for Jerome Olinick 1 in the Louis Manchaca Grant.

Refugio County: Fred W. Shield & Allen-Morris have completed A. W. J. Heard 3 in the Heard area of the Refugio field for 131 barrels of 36.5-gravity oil daily through a ⅛-inch choke from perforations at 6222-24 feet. Gas-oil ratio was 572/1.

☆Upper Texas Coast

Production Indicated on North Flank of Nash Dome

Production indicated on north flank of Nash dome; Trinity wildcat holds interest; second north flank producer at Boling is testing; Superior enters Blue Lake field.

Fort Bend County: Danciger Oil & Refining Company has opened production on the north flank of Nash dome at Theodor Meier 1, H. N. Cleveland survey. Bottomed in a second sidetracked hole at 5894 feet, operator perforated casing at 5865-75 feet and on an 85-minute drill-stem test the well flowed at the rate of 360 barrels of 29.8-gravity oil daily through ¼-inch chokes, top and bottom, with a working pressure of 600 pounds. Seven-inch casing was set at 5878 feet. Between 5800 and 5840 feet, the well logged 25 feet of gas sand and then picked up 24 feet of oil sand in coring from 5840-5894 feet, total depth. Final completion now is being made. Production at Nash dome has been confined to the south flank. However, no wells are now on production.

Cecil Hagen's Wolters 3, west outpost in the Thompson field, cored oil sand at 5379-5401 feet and 5417-39 feet and set 5½-inch casing at 5445 feet, total depth, for completion. This test is a west offset to the operator's Wolters 1.

Trinity County: Interest is focused on Magnolia Petroleum Company's Bolton 2, Glendale area. This test ran an electrical log at 10,412 feet and is drilling in shale and chalky lime below 10,540 feet. Gas pressure was reported encountered before running the log. This well found the Woodbine section thin and with no porosity. It is believed to be in the Georgetown lime at its present depth.

Wharton County: Union Oil Company of California's Hawes 2, Huff League, south of the north flank discovery well at Boling dome, is squeezing perforations at 4882-4900 feet after the pressure decrease and the water flow increased. The well first came in flowing 165 barrels of oil daily through a 5/32-inch choke with a tubing pressure of 510 pounds.

Brazoria County: The Superior Oil Company has become the second operator in the Blue Lake field, discovered early this year by Glenn H. McCarthy. Superior has staked Vernon T. Donnelly et al 1 on a 62-acre tract in the John Bradley survey as a north offset to McCarthy's Donnelly 1.

Liberty County: H. W. Snowden has located a 5500-foot wildcat on the northwest flank of the old North Dayton dome. It is Mrs. Martha Davis et al 1 in the H&TC survey, Sect. 121.

Harris County: Humble Oil & Refining Company's Milo 10, Tomball field, deepest active test on the Texas coast, was drilling below 13,500 feet in sandy shale.,

Magnolia Petroleum Company's Warren Ranch 3, on the southwest flank of the Hockley dome, was drilling in salt at 4950 feet.

Court Review Refused

The Supreme Court last week refused to review the action of the Eighth Circuit Court of Appeals dismissing the old Madison Oil Company case.

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September 30, 1945

RESOURCES

Cash and Due from Banks	$ 38,420,181.97	
U. S. Government Securities	79,250,382.89	$117,670,564.86
Other Bonds and Securities		5,445,440.12
Loans and Discounts		16,687,491.76
Federal Reserve Bank Stock		150,000.00
Income Earned, Not Collected		345,074.24
Bank Premises		828,624.60
Furniture and Fixtures		1.00
		$141,127,196.60

LIABILITIES

Deposits: Individuals, Firms and Corporations	$93,073,603.37	
Banks	25,107,013.80	
Public Funds	15,449,665.42	$133,630,282.59
Income Collected, Not Earned		50,890.88
Taxes, Interest and Expense—Accrued		558,790.32
Dividend Declared (Payable December 15, 1945)		40,000.00
Capital	$ 2,000,000.00	
Surplus	3,000,000.00	
Undivided Profits and Reserves	1,847,232.81	6,847,232.81
		$141,127,196.60

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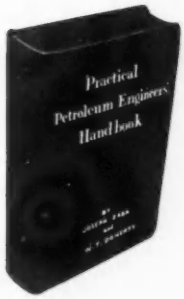

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This handbook was compiled and published for the purpose of saving the time of operators, engineers, superintendents, foremen and others.

TABLE OF CONTENTS

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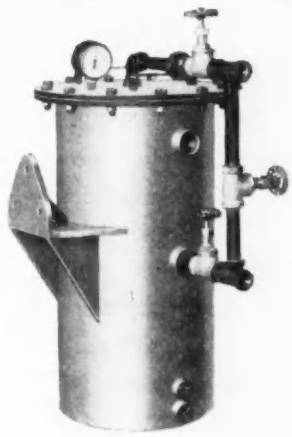

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☆South Louisiana

Testing Continues at Two Cameron Parish Wildcats

Cameron Parish wildcats still testing; Iberia Parish deep tests to begin operations; Egan field activity boosted; east outpost staked in Good Hope field.

Cameron Parish: Testing continues at 2 wildcat tests in this area. Continental Oil Company and Sohio Oil Company's Dobbertine 2, 9-15s-14w, Johnson Bayou sector, was making completion attempt through a new set of perforations after a test at 9006-14 feet failed. Other tests at 9050-56, 9044-49 and 9032-41 feet showed some gas and salt water.

In the Mud Lake region, Magnolia Petroleum Company's Lutcher 1-A, 32-14s-11w, was testing through perforations at 10,658-664 feet. On an 8-hour gauge, the well made 15 barrels of condensate through a ⅛-inch choke.

Iberia Parish: Union Oil Company of California has staked a 12,000-foot wildcat in the western part of this parish. It is the Delcambre 1 in 4-14s-5e.

In the Iberia area of this parish, Humble Oil & Refining Company is building road to its location for Mayo Romero 1 in 2-12s-7e.

Acadia Parish: Activity in the Egan field was boosted with the completion of a new oiler and the staking of 3 new locations. Sun Oil Company and Sohio's Regan Unit 1-E, at Egan, was completed without a gauge through perforations at 10,800-835 feet.

The new locations are Irwin-Hudson et al Houssiere-Latreille B-2 and B-3 in 30-9s-2w, and Sun-Sohio's Regan Unit 1-A in 31-9s-1w.

In the South Bayou Mallet field, Amerada Petroleum Corporation's James Turner has been completed for 106 barrels of 42.5-gravity oil daily through a ⅛-inch choke from total depth of 9850 feet. Tubing pressure was 2850 pounds and gas-oil ratio, 687/1.

Beauregard Parish: Sun's Rice Land and Lumber Company, 32-5s-4w, wildcat in the Singer area, is drilling below surface casing set at 2017 feet.

Magnolia's Musser-Davis 2, Oretta area, has casing set at 8747 feet and is testing.

St. Charles Parish: Shell Oil Company has located an east extension test in the Good Hope field. It is the Blythe et al Unit 1 in 41-12s-8e. Projected depth is 10,000 feet.

Also at Good Hope, Humble's Sarpy Brothers 4, 7-12s-8e, has been completed for 389 barrels of 37.2-gravity oil daily through a 3/16-inch choke from perforations at 7770-92 feet. Tubing pressure was 1275 pounds.

North Carolina Test to Be Drilled Soon by Standard

Standard Oil Company (New Jersey) is preparing to drill its first test on a large block of state leases in North Carolina. Location has been made on a 1600-acre state-owned tract near the famous Hatteras Light, off the North Carolina coast.

Noble Drilling Company has the contract and will start moving in material immediately, reports from North Carolina say.

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☆North Louisiana

Production Test Scheduled For Benton Extension

Benton extension prepares to make production test; second Tremont test perforated for test; Delhi dry hole defines west production.

Bossier Parish: Barnsdall Oil Company and Sohio Petroleum Company's Padgett-Bundy 1, C NW SE 17-20n-12w, prospective extension to the Benton field, 1½ miles southeast of the discovery well, perforated at 8116-20 feet in the Cotton Valley "D" sand and then at 8050-58 feet and squeezed both without a test. Operators are preparing to make a production test in the "D" sand. Total depth of the well is 9307 feet.

G. H. Vaughn is coring below 8040 feet in Katie Odom Padgett, C SW NE 1-20n-13w, 1½ miles northwest of the Benton discovery, and checking out on structure, with top of the Cotton Valley only 15 feet lower than the Hanks 1 discovery well.

Lincoln Parish: The California Company's W. W. Norris 1, 13-18n-1w, which has had shows indicating it may make the second producer in the Tremont gas-distillate field, is preparing to take production tests. Perforations from 9060-86 feet showed gas and distillate, and tubing with packer was set at that depth. Total depth is 9490 feet with pipe cemented at 9203 feet. The pay was topped just 9 feet lower than in the discovery well.

California is rigging up Mary Lou Caver 1, C SW SW 11-19n-4w, 1 mile west of the Hico field discovery recently completed from the Cotton Valley.

Ouachita Parish: California is drilling below 9040 feet in Walter Maxey 1, 32-18n-1e, wildcat reported to have had gas showings indicating commercial production.

Richland Parish: Another dry hole ¾ mile west of production at Delhi further defines the limits of the field. George D. Stevens abandoned T. C. Nelson 1, C SW SW 29-17n-9e, at 3438 feet. No sands were indicated by electrical log run to 3429 feet.

Jackson Parish: Shell Oil Company's Tremont Lumber Company 2, 23-15n-1w, is drilling below 9115 feet in sandy shale, still in Travis Peak topped at 7809 feet.

Concordia Parish: The Lake St. John field's deepest test, California's Applegate 7, 14-9n-10e, encountered trouble when trying to set retainer at 10,740 feet, and skidded up the hole. Operators probably will have to drill out before making a successful squeeze job. Total depth of test is 12,790 feet.

☆Arkansas

Three Tests Will Follow Gem Creek Field Strike

Three tests to follow Gem Creek discovery; wildcats drilling without encouraging shows.

Ouachita County: McAlester Fuel Company's Charles Wesson 1, C NE NE SW 24-15s-19w, discovery well of the Gem Creek field, will be followed by 3 other tests immediately. G. H. Vaughn

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has staked Davis 1, C SE SE NE 28-15s-18w, and Davis 2, C SW SE NE 28-15s-18w. Spartan Drilling Company has location for Southern Advance Company 2, C SE SE NW 27-15s-18w. Brizzolora and Carnes have staked Dodson Brothers 1, 35-15s-19w, 2 miles west of the new field.

Union County: The Atlantic Refining Company has staked Goode 1, NW 6-17s-13w, as a Smackover lime wildcat in the Champagnolle area, where 2 previous Smackover wildcats have been drilled. Atlantic's test is 2 miles southeast of Giles 1, 26-16s-14w, which was abandoned at 5735 feet without shows; and 2½ miles northwest of Phillips Petroleum Company's Union Saw Mill 1, abandoned at 5835 feet.

Brown & Wheeler will rig up pump before making an official test of C. Clark's C SW SW 22-18s-12w, a new producer in the Strong area. The well is flowing by heads at the rate of 30 barrels daily through a ⅜-inch choke on tubing from perforations at 4817-22 feet.

R. C. Wallingford's Duke 1, C SW NE NW 13-18s-13w, 2 miles southeast of Urbana field, will also rig up pump before testing.

Miller County: Barnsdall Oil Company's Nichols et al 1, C NE NW 20-18s-28w, is drilling below 8380 feet in Cotton Valley, with no showings.

Columbia County: Crescent Drilling Company's wildcat, Edna Hawkins 1, C SW NW 8-17s-18w, is drilling below 6605 feet.

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☆ Mississippi

New Producers Noted for Jeff Davis County Pool

Two producers noted for Gwinville pool in Jeff Davis County; Adams County test discouraging; new Fayette field being rapidly developed; Baxterville test in Lamar County abandoned.

Jeff Davis County: Humble Oil & Refining Company's Denkmann Lumber Company 1, C NW SE 27-9n-19w, Gwinville field, has been completed as a fair commercial producer after encountering considerable trouble with salt water. After extensive testing in the 8000-foot zone, the well indicated an initial production rate of 108 barrels of fluid per day with gas-oil ratio of 5850-1. Production is from 8262-64 feet.

Gulf Refining Company's A. L. Norwood 1, SEc NE SE 28-9n-19w, Gwinville, also has been completed with an initial flow of 4,231,000 cubic feet of gas and 25 barrels of condensate per day with production from lower sections of the Eutaw horizon at 8128-38 feet. Humble's J. H. Williams & Sons 1, N&W C 13-7n-18w, deep test, has been abandoned at 10,246 feet without shows.

Lamar County: Gulf's W. E. Davis 1, NWc 7-1n-16w, Baxterville field, has been abandoned after months of difficulty. The well had very encouraging shows in the Tuscaloosa section with good gas odor at 7745-90 feet, and again at 8720-42 feet cores recovered porous sand and heavy oil. But at that depth a drill stem was lost and when new hole was drilled additional trouble was encountered Well was finally bottomed at 8464 feet. Gulf's J. M. Andrews 2, SEc 6-1n-16w, Baxterville, is drilling below 7810 feet in the Tuscaloosa horizon with no shows. Cores at 7720 feet recovered gray shale. The Superior Oil Company's R. Batson 4, SEc SW NW 20-1n-16w, Baxterville area, showed up well in a test of the Tuscaloosa zone. In a 30-minute drill-stem test 3050 feet of oil was recovered. The well continues to test oil sands below 8800 feet.

Newton County: Sun Oil Company's Citizens National Bank 1, C SW NE 23-5n-13e, wildcat test in the eastern section of the state, is drilling below 6235 feet with no shows indicated. Eutaw was topped in this test at 3318 feet, Tuscaloosa at 3680 feet, and the Massive zone at 4760 feet.

Smith County: Gulf's O. P. Foley 1, SE NW 8-10n-13w, which is being drilled deeper after being abandoned at 2269 feet, is below 4510 feet with no shows indicated. Previous cores indicated top of chalk at 4010 feet.

Jefferson County: Humble's M. R. Smith B-1, 16-9n-1e, offset, is drilling below 310 feet in a drive for the upper Cretaceous. The M. R. Smith 1 developed production from the Massive sand at the 9700-foot level, and this new test should give a better idea of the potentialities of the field. Humble's S. Hirsch Company 1, 15-9n-1e, is drilling below 2812 feet after setting surface casing.

Madison County: The Carter Oil Company's Agnes Anderson 1, NE NW SW 11-11n-3e, only test drilling in the old Pickens field, is testing the Eutaw with well bottomed temporarily at 4871 feet. Several drill-stem tests at 4843-71 feet failed because of packer. No shows

have been reported. Sohio Petroleum Company's Mrs. O. K. Andrews 1, SEc NE SW 11-9n-1w, has erected derrick for a wildcat test of the Eutaw.

Adams County: Charles H. Osmond's Armstrong-Ellislie 1, 31-5n-2w, wildcat, had discouraging results in tests of the Massive sands below 11,000 feet. Humble's Mrs. C. L. McKittrick 1, SEc 12-6n-3w, Carthage Point field, is drilling below 4375 feet. Tests of the 4000-foot zone were unproductive. In the Cranfield field The California Company's Ella G. Lees 8, 29-7n-1w, is drilling below 8607 feet with no shows. California is engaged in 6 operations in the field.

Hinds County: Carter's Simmons C-134, NWc SE NW 29-4n-3w, wildcat, is drilling below 6893 feet with no shows. Wilcox horizon was topped at 3015 feet. Leonard Jones M. Lerew 1, NW NE 15-5n-1e, Jackson gas field, is drilling below 3000 feet after cores of gas rock section were barren.

West Texas Line Planned

The Texas-New Mexico Pipe Line Company is preparing to lay a short line of 6- and 8-inch pipe to connect the new oil development in southwest Andrews County, West Texas.

☆Alabama

East Gilbertown Field Well Decreases Salt Water Flow

Work on wildcats showing progress; East Gilbertown well decreasing salt water flow.

Choctaw County: The Carter Oil Company's Caroline Moseley 1, SW SE NW 5-10n-3w, East Gilbertown field, has experienced some success in cutting down percentage of salt water in latest tests. Last report showed the well pumping 22 barrels of oil and 4 barrels of salt water in a 7-hour period. Production is from the Eutaw horizon below 3250 feet.

Carter's Sam Allman Unit 1, C SW SE NE 5-10n-3e, drilled plug from 7-inch casing set at 3240 feet and took several cores. One from 3252-86 feet had spotted stain. It is now coring at 3360-70 feet.

Wilcox County: Southern Natural Gas Company's G. W. Morgan, Jr., Estate 1, C SE SE SW 32-12n-5e, is drilling below 7646 feet in hard lime without shows.

Washington County: J. T. Parks' S. A. Hobson 1, SW NE 9-8n-2w, a wildcat which was abandoned earlier in the year and which then resumed operations recently, is drilling below 5300 feet with no shows.

Walker County: J. H. Deason's DeBardelaben 1, C SE NW 6-14s-5w, is drilling below 995 feet.

Florida

Humble Oil & Refining Company's G. C. Carlton Estate 1, C SW NE 34-38s-29e, Highlands County deep test, continues to core below 11,401 feet with nothing encouraging. The latest drill-stem test recovered mud and salt water.

Collier County: Humble's Gulf Coast Realty Company 7, SW NE 17-48s-30e, Sunniland field, is drilling below 11,557 feet with no shows at lower levels. Cores at 9918-28 feet indicated lime with traces of oil.

Charlotte County: Humble's Lowes-Treadwell 1-A, C SW NE 17-42s-23e, is

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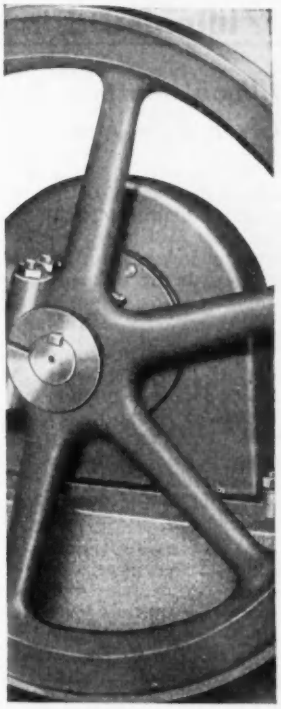

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drilling below 10,928 feet in anhydrite and lime.

Calhoun County: The Pure Oil Company's St. Andrews Bay Properties 2, NW 25-1n-11w, is preparing to spud.

Georgia

Keryln Oil Company has completed derrick for its Cecil Pate 1, C SE Landlot 144, Land District 13, in Crisp County, first test to be drilled in the state for several months.

☆ Illinois Basin

Illinois' Mattoon Pool Is Given Mile West Extension

Mattoon pool, Illinois, given a mile west extension; 4 other extension projects are drilling; Richland County given another McClosky producer; new pay horizon in prospect in Edwards County; new era being opened in Gibson County, Indiana.

Illinois

T. Blake Dirickson's Linder 1, NE SE NW 27-12n-7e, gave the Mattoon pool a mile western extension by swabbing 338 barrels of oil and no water in 24 hours from Aux Vases sand, natural, and is being placed on pump. Walter Duncan has started drilling at Wallace 1, NW SW NE 27-12n-7e, an east offset to the Linder well.

E. P. Jarvis' Armantrout 1, SW NE SE 26-12n-7e, approximately midway between the north and south producing areas of the pool, tested the Aux Vases sand unsuccessfully, but is being completed in Bethel sand to add a new horizon. The field has production in Aux Vases, Cypress and McClosky. The Bethel pay at Armantrout 1 was encountered at 1885-1912 feet, and showed 3 barrels per hour after a 50-quart shot.

Four wildcats are drilling in widely separated sections, 2 north and 2 south of the pool.

Richland County: Co-operative Refining Company has given Richland County another large McClosky producer at the south edge of the Calhoun pool. The well, Rotrammel 1, NE NE SW 7-2n-10e, flowed 1340 barrels of oil in 24 hours after 5000 gallons of acid. Pay was recovered at 3114-24 feet.

White County: Lario Oil and Gas Company's Organ 1, NW NW NE 35-4s-9e, is opening a new area with Tar Springs sand production. With 7-inch casing set for tests at 2567-75 feet and 2600-11 feet, operator is waiting on cement. Depth of hole is 3379 feet.

Edwards County: A new pay horizon is in prospect at G. H. Wickham's Schroeder 3, SE NW SW 26-2s-14w, 3 miles northeast of Grayville. Casing has been set for production test of Cypress sand at 2609-19 feet. During a 1-hour drill-stem test the well showed 1020 feet of clean oil and 240 feet of oil-cut mud.

Indiana

Ryan Oil Company's Putnam 1, NE NW NW 26-1s-12w, Gibson County, is opening a new area 1½ miles east of the Mt. Carmel pool of Illinois. During a 1-hour drill-stem test of Hardinsburg sand at 1790-1800 feet, the well made gas in 30 minutes, 300 feet of oil, and 180 feet of oil-cut mud.

☆ Michigan

Starts Set 14-Month High; Roscommon Has Producer

Starts jumped to 30 for the week to set a 14 months high; wildcat completions include both an oil and gas discovery.

Roscommon County: E. V. Hilliard's State D1, E½ SE SE 19-21n-3w, Roscommon Township, averaged 35 barrels oil per day after a 500-gallon acid treatment in the Traverse lime at 3183 feet. The outpost is 2 miles northwest of the Headquarters field with geology pointing to a new pool rather than an extension. Hilliard, who discovered the Headquarter pool in 1941, controls the bulk of the acreage in the new area.

Mecosta County: Chapman Oil Company and West Michigan, Consumers Company's Minkel 1, S½ SW SW 7-14n-8w, Morton Township, logged Stray sand at 1320 feet and completed at 1328½ feet with 2,800,000 feet of gas. The test is a mile east of the old Austin gas pool (Stray sand production) which was converted into a storage depot in 1941 after being purchased by the Michigan Consolidated Gas Company from Taggart Brothers Company.

☆ Rocky Mountain Area

Lost Soldier Has Best of 7 Wyoming Completions

Pondera field, Montana, has new producer; Wyoming has 7 successful completions during week; California completes 2 wells in Rangely field.

Montana

Increased activity is expected to follow the success of A. B. Cobb & Company's Erickson 2, Pondera field, which came in for 200 barrels a day.

Wyoming

Sinclair Wyoming Oil Company's Hughes 9, Lost Soldier field, Sweetwater county, is a producer with 897 barrels of oil reported in the first 24 hours. This was the best of 7 successful Wyoming completions during the week.

Colorado

The California Company completed 2 more Rangely field wells for approximately 500 barrels each, making 25 producers from the Weber sand with no failure yet reported on deep test.

☆ California

Tests to Reveal Outcome Of Leffingwell Wildcat

Outcome of Leffingwell wildcat hinges on tests; Richfield starts second test in highly-regarded Bandini area near Los Angeles; old Huntington Beach well recompleted for 125 barrels; Tide Water testing Cantua Creek wildcat for production from 11,893 feet.

Los Angeles County: Outcome of Standard Oil Company of California's 1 in 11-3s-11w, remains in doubt. The operator ran a formation test from the shoe of the 7-inch casing at 10,145 feet to the plug at 10,293 feet. With the tester open 5½ hours the recovery was 1800 feet of drilling mud and water, 2500 feet of muddy oil, 3500 feet of oily mud and 400 feet of salt water. Tubing is being run to swab open hole.

New attention was attracted to the Bandini area, east of Los Angeles near the Santa Fe Springs field, when Richfield Oil Corporation staked its second wildcat in the area, Simons 1 in 15-2s-12w. Richfield's first test, U. P. Unit 1 in 9-2s-12w, which field gossip credits with promising showings, has been tied up with a fishing job for several weeks. Operator has been unable to recover fish below 6709 feet and has decided to plug the hole and redrill. C. G. Willis' Pansini 1 wildcat in the Bandini area, 23-2s-12w, is drilling after setting a 7-inch protection string at 8195 feet.

Seaboard Oil Company's deep test, L. A. Brick 1, in the old Los Angeles oil field near the downtown business district, is prospecting below 7050 feet in hard shale after a test of showings from 6865-6979 feet. With the tester open 5½ hours, recovery was disappointing, consisting of only 723 feet of gas-cut mud.

Eagle Oil & Refining Company has redrilled Wardlow 2, old Huntington Beach well, to 2915 feet and recompleted on the pump for 115 barrels of 17-gravity clean oil. The company will immediately redrill Wardlow 1.

The Ohio Oil Company's Gardena wildcat, Gardena Community 1 in 24-3-14, is still troubled by water intrusion. Stuck tubing has been recovered and the operator will continue efforts to make a producer.

Kern County: Independent Exploration Company's Oceanic 1 in 22-29s-21e, wildcat territory near the Cymric field, ran a formation test at 3605-78 feet and recovered 320 feet of mud, 100 feet of gas-cut mud, and some oil. Operator is preparing to core from present depth of 3678 feet.

General Petroleum Corporation's deep test of the Fruitvale field, Calloway 66-17 in 17-29-27, is prospecting at 10,014 feet. This well may go to basement.

Fresno County: Petrol Corporation's Petrol 2-14 in 14-15-17, has obtained a water shut-off on 7-inch casing at 5246 feet and now gun-perforating for production. Jones 54-13 has been staked in Sect. 13.

Tide Water Associated Oil Company is making a formation test in its deep test of the Cantua Creek area, S. P. 82-15 in 15-17-15. With tester open 1 hour, 1873 feet of gas-cut mud was recovered from the interval 11,665-11,893 feet. Crew was running tubing to swab.

Ventura County: California Standard has abandoned its deep test of the Fillmore area, Elkins 1 in 6-3n-19w, at 13,331 feet. Failure to recover stuck drill pipe was a factor in the decision to abandon. In nearby Santa Paula, Standard is drilling S. P. U. 1 in 10-4n-20w, at 8250 feet in shale.

Order Rescinded

An emergency order reducing the per well daily allowable in the West Edmond pool of Central Oklahoma from 150 to 100 barrels has been rescinded by the Oklahoma Corporation Commission. The measure was provoked by the strike of refinery workers which threatened the markets of some of the field's largest producers.

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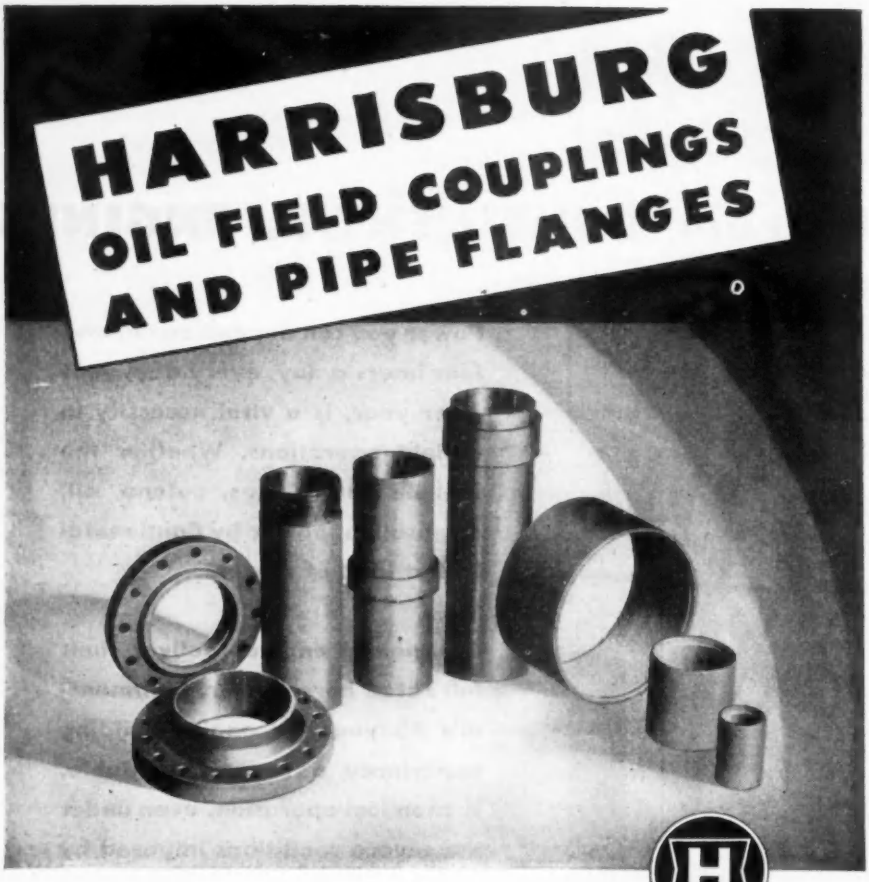

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☆ Canada

Hay Lake Strike on Pump; North Offset Is Slated

Admiral Oils & British Dominion 1, Madison limestone discovery well on the Hay Lake Dome and generally regarded as the most important oil discovery in Alberta in 1945, was slated to go on pump October 11. Using 1¾-inch pump, with shortest possible stroke, initial runs will be in the 100 to 110-barrel daily range.

The 3,094.5-foot well received a 500-gallon acid treatment, the acid going in at 2 gallons per minute under 1450 pounds pressure initially and winding up at a rate of 20 gallons per minute under 1250 pounds.

Swabbed until October 5, recovery ranged from 8 to 15 barrels hourly (average rate 10 barrels hourly), with fluid level holding more than 1000 feet off bottom. Shut in each night, fluid level rose to between 2000 and 2200 feet off bottom. Recovery was largely 28.5-gravity, amber-colored crude, with a cut ranging up to 10 per cent drilling fluid and acid water.

The well will be followed immediately by a north offset, Admiral Oils & British Dominion 2, in the southeast 10 acres of lsd 10 22-1-17w4. The new test will make a careful test of the chert-lime contact zone cased off at the discovery, as well as the succeeding narrow porous.

The Hay Lake discovery is 3½ miles north of the International Boundary and about 20 miles northwest of the north end of the Kevin-Sunburst oil field of Montana.

Empire-Pacific 2, lsd 16 22-19-12w4, South Princess Madison limestone discovery well shut in as a gas well the end of August and reopened September 27 to supply fuel gas for drilling the National-Empire 1 wildcat, may be developing into a flowing oil well.

Opened up at a restricted rate (around 3 million cubic feet daily) through ⅜-inch top-hole choke, against 900 pounds on the casing, 100 pounds on the separator, the well recovered 8.5 barrels of 39 to 40-gravity oil through the separator the first 19 hours. In succeeding 24-hour periods, oil recovery rose to 22.4, 39.4, 51, 55, 68 and 87 barrels. Gas flow dropped to little more than 1 million cubic feet; and gravity of the liquid product dropped to 26.5.

Bata Petroleums' 11, lsd 4 19-39-22w3, east extension test in the Vera-Unity gas field of Saskatchewan, may develop oil production from the Unity (Basal Lower Cretaceous) sand, source of 15 to 30 million cubic feet daily gas flows at earlier completions in the proven gas area. The well entered the Unity sand at 2212 feet, coring 3½ feet of oil-saturated sand. A 1-hour drill-stem test yielded only a small gas flow, plus a column of 420 feet of oily drilling mud. Drilling was completed at 2237 feet, after entering the Devonian limestone at 2226 feet, and 7-inch casing has been set at the top of the Unity.

The well reached the Viking sand at 1761½ feet, where a drill-stem test showed a gas flow of 560,000 cubic feet daily against bottom hole flowing pressure of 200 pounds. If commercial oil production is not developed from the Unity, the well will complete as a Viking gas well.

EXPLORATORY COMPLETIONS

ARKANSAS WILDCAT

Calhoun County: R. H. Crow's Stout Lbr. Co. 1, cse se nw 26-14s-14w, abnd 2856 ft.

CALIFORNIA WILDCATS

Los Angeles County — Failure: Barnsdall's Newhall Corp.-Wolfson 1, 26-4n-17w, Newhall-Potrero area, abnd 9508 ft.

Kern County—Failure: Independent Exploration Co.-Universal Consol. Oil Co.'s Fee 2, 36-27s-28e, Round Mt. area, Vedder 1360 ft, abnd gray sd 1460 ft.

COLORADO WILDCAT

Mesa County—Failure: Superior Oil Co.'s Miller 1, sw sw nw 36-8s-91w, Divide Creek, test Sundance and Morrison, abnd 11,942 ft.

ILLINOIS WILDCATS

Edwards County—Failure: Ill. Mid-Cont.-Texas Co.'s Wiseman 1, se se nw 15-2s-14w, abnd 3074 ft.

Jasper County—Oil Discovery: W. W. Shaffer et al's M. Stifel 1, sw nw se 2-7n-10e, Rosi 2540-2553 ft, pump 25 bbls, td 2715 ft.

Marion County—Failures: H. F. Robinson et al's Vaughan 1, sw sw sw 36-3n-1e, abnd 2103 ft.

Geo. H. Engle's Vursell 1, se se nw 12-2n-1e, abnd 2774 ft.

Mason County—Failure: Pekin Oil Project's Sutter 1, ne se nw 8-23n-6w, abnd 1503 ft.

White County—Oil Discovery: S. W. Pearce, Tr.'s Boultinghouse 1-B, ne se sw 6-4s-14w, Cyp 2699-2713 ft, pump 210 bbls, td 3149 ft.

White County—Failure: Carter Oil's Crebs 1, nw ne ne 13-4s-8e, abnd 3565 ft.

KANSAS WILDCATS

Butler County—Discovery: K. T. Weideman's Hoard 1, ne ne sw 28-29s-8e, Miss 2808-12 ft, pump 25 bbls, td 2844 ft.

Decatur County — Failure: Continental's Brown 1, nec 33-3s-27w, Arb 3923 ft, abnd 3982 ft.

Dickinson County—Failure: Transwestern's White 1, se cor 14-14s-3e, Arb 3024 ft, abnd 3037 ft.

Edwards County—Failure: Cities Service's Minet Est. 1, se se ne 15-25s-17w, Simp 4779 ft, Arb 4855 ft, abnd 4886 ft.

Phillips County—Failure: Tom Allen et al's Schorer 1, se ne ne 33-5s-19w, Arb 3564 ft, abnd 3590 ft.

Saline County—Failure: Calif. Co.'s Juleps 1, ne cor 30-15s-1w, Miss 2650 ft, abnd 2695 ft.

KENTUCKY WILDCATS

Daviess County — Gas Discovery: Sohio's Sauer 1, 1-P-27, Walt 1122-31 ft, flow 591 gas, td 1934 ft.

Henderson County—Failure: Ashland O&R's Handley 1, 16-O-24, abnd 2689 ft.

McLean County—Failure: Ashland O&R's Fulkerson 1, 20-L-29, abnd 2143 ft.

NORTH LOUISIANA WILDCATS

Caddo Parish—Failure: United Carbon Co.'s T. R. Grayson Lbr. 1, 30-19n-14w, Massive anhy 4458-4782 ft, Pettit 5647 ft, perf 60 shots 5958-68 ft, sw and ssg, abnd 6160 ft.

Lincoln Parish—Distillate Discovery: California Co.'s M. H. Nobles et al 1, 12-19n-4w, show of oil Travis Peak, gas and cond Cotton Valley, perf 285 shots 8700-50 ft, Bodcaw sd, flow 195 bbls 55-gr dist, ¾-in and 3/16-in, cor 37,000/1, tp 3500 lbs, shut in, td 9137 ft.

MICHIGAN WILDCATS

Arenac County—Failure: R. W. Whyte's McSpadin 1, ne nw nw 34-19n-5e, Dundee 2932 ft, abnd 2990 ft.

Ionia County—Failure: S. J. Higelmire's Emery 1, sw ne nw 1-8n-7w, Dundee 3016 ft, abnd 3110 ft.

Kent County—Failure: W. S. Cook's Erickson 1, nw nw ne 19-9n-11w, Traverse 2325 ft, abnd 2356 ft.

Midland County—Failure: Allegan Pipe & Supply Co.'s Merriman 1, ne se ne 24-13n-2e, Dundee 3412 ft, abnd 3642 ft.

Missaukee County — Failure: Scott and Wrights' Weilder 1, w½ nw se 34-22n-7w, Dundee 3946 ft, abnd 4121 ft.

Montcalm County—Douglass Oil Discovery: Union Dr. & Prod. Co.-Leslie T. Barbers' Gyger 1, w½ se nw 1-11n-7w, Dundee 3889 ft, pay 3391-97 ft, flow 300 bbls 11 hours, td 3397 ft.

Newaygo County—Failures: Sohio's Hills 1, nw se sw 26-14n-14w, Traverse 2319 ft, abnd 2322 ft.

West Michigan Consumer's Trails End 1, sw ne ne 33-15n-12w, abnd 1043 ft.

Allegan County—Failures: P. F. Broughton's Walker 1, ne nw ne 32-1n-14w, abnd 1248 ft.

S. L. McCall's Clark 1, se ne nw 1-2n-14w, abnd 1561 ft.

Arenac County — Failure: Mich. Oil Co.'s Oswald 1, se se nw 25-20n-6e, abnd 3201 ft.

Kent County—Failure: P. F. Broughton's Austin 1, nw se sw 11-10n-11w, abnd 2563 ft.

Mecosta County — Morton Gas Discovery: Chapman Oil Company and West Mich. Consumers Co.'s Minkel 1, s½ sw sw 7-14n-8w, Stray sand 1320 ft, gauge 2,800,000 gas, td 1328½ ft.

Midland County — Failure: Union Oil Co.-Chapman Oil Co.'s Lanphierd 1, s½ se ne 28-15n-1e, Dundee 3670 ft, abnd 3795 ft.

Newaygo County — Failure: Mich. Consol. Gas Co.'s Stockwell 1, c nw 30-16n-11w, abnd 1194 ft.

Roscommon County—Roscommon Oil Discovery: E. V. Hilliard's State D-1, e½ se se 19-21n-3w, Traverse 3161 ft, flow 35 bbls after acid, td 3183 ft.

Washtenaw County—Failure: C. W. Collin's Hinderer 1, nw nw nw 36-2s-3e, abnd 1290 ft.

MISSISSIPPI WILDCATS

Bolivar County—Failure: O. W. Killam's Dattel 1, sw sw ne 18-23n-7w, chalk 3780 ft, Eutaw 4503 ft, abnd 5114 ft.

Jeff Davis County—Failure: Humble's J. H. Williams & Sons 1, abnd 10,426 ft.

Wayne County — Failure: Woodley Pet.-Premier Oil Ref. Co.'s U.S.A. 1, sec sw 28-7n-9w, Wilcox 2153 ft, Eutaw 5882 ft, Tuscaloosa 6654 ft, Massive sd 7670 ft, abnd 7925 ft.

MISSOURI WILDCAT

Stoddard County—Failure: M. H. Marr's Barnett 1, sw sw sw 3-25n-11e, abnd 4580 ft.

NEW MEXICO WILDCAT

De Baca County—Failure: Firesafe Builders Products Corp.'s State 1, c ne ne 8-3s-26e, jkd and abnd 1582 ft, to skid 30 ft south.

OKLAHOMA WILDCATS

Lincoln County—Failure: Ashland O&R's Reel 1, nw nw ne 24-12n-5e, Misener 4404 ft, Hunt 4496 ft, abnd 4725 ft.

Logan County—Failure: L. A. Wright et al Nance 1, sw nw 26-17n-2w, Syl. 5579 ft, Vi. 5670 ft, abnd 5951 ft.

Major County—Failure: Hunt Oil Co.'s Dragh 1, se ne sw 32-22n-14w, Simp 9112 ft, Wx. 9208 ft, abnd 9315 ft.

Marshall County—Failure: Magnolia's Neff 1, sw se nw 25-5s-5e, Prue 5404 ft, abnd 5510 ft.

Okfuskee County—Oil Discovery: Wood Oil Co.'s Smith 1, se sw ne 23-12n-10e, Booch 2520-40 ft, flow 115 bbls 29.8-gr oil, 2,500,000 gas, td 2540 ft.

Oklahoma County—Failure: British American et al's Whitt 1, ne ne ne 24-12n-2w, abnd 6462 ft.

WEST TEXAS WILDCATS

Cochran County—Failure: Gulf's Hancock 1, 573 ft nsl and 760 ft ewl e½ PSL 5, blk L, elev 3799 ft, anhydrite 2340 ft, brown lime 3970 ft, San Andres 4360 ft ,abnd 5204 ft.

Crosby County—Failure: Geo. P. Livermore, Inc.'s Wiese 1, c ne ne D&W Ry. 64, blk C, elev 3196 ft, anhydrite 1230 ft, San Andres 2640 ft, Glorietta 3900 ft, Clear Fork 4370 ft, Tubb sand 4990 ft, abnd 8517 ft.

Dickens County—Failure: Geo. P. Livermore, Inc.'s Bird 1, (OWDD) c nw ne H&GN Ry. 288, blk 1, elev 2551 ft, otd 2602 ft, Yates 1060 ft, lime 1540 ft, San Angelo 2493 ft, Ellenburger 8215 ft, granite 8388 ft, abnd 8390 ft.

Gaines County—Failures: Texas Co.'s Parmer 1-B, 660 ft out swc lab 12, Lge 317, Parmer CSL sur, elev 3080 ft, anhydrite 2030 ft, Yates 3230 ft, brown lime 4390 ft, San Andres 5070 ft, abnd 5417 ft.

Union Oil Co.'s Williams 1, c nw nw PSL 7, blk C-44, elev 3249 ft, anhydrite 2170 ft, Yates 3300 ft, Yoakum lime 4370 ft, abnd 5510 ft.

Garza County — Failure: A. W. Cherry-B. Kidd's Stoker-Magnolia 1, ne ne ne GH&H Ry. 8, blk 2, 2547 ft, anhydrite 1300 ft, lime 2380 ft, abnd 3015 ft.

Lamb County — Failure: Humble's Bagwell 1, 660 ft out swc labor 25, Lge 675, State Capitol Lands, elev 3527 ft, anhydrite 1670 ft, brown lime 2830 ft, San Andres 3465 ft, abnd hard chert and lime 9162 ft.

Martin County—Failure: Continental's Douglas 1, ne ne ne T&P Ry. 33, blk 34, T-3-N, elev 2716 ft, anhydrite 1540 ft, base salt 2100 ft, Yates 2190 ft, brown lime 3400 ft, Leonard sand 6950 ft, abnd 7200 ft.

WEST TEXAS NEW PAY TEST

Gaines County—Russell Field Failure: Argo Oil Corp.'s Jones 1-A, c ne sw sect 490, blk G, C'CSD&RGNG sur, elev 3590 ft, anhydrite 2030 ft, Yates 3070 ft, Yoakum lime 4070 ft, San Andres 4730 ft, San Angelo 6140 to 6295 ft, Tubb 7460 ft, Wolf Camp 9305 ft, abnd 9668 ft.

WEST CENTRAL TEXAS WILDCATS

Concho County—Oil Discovery: Eltex, Ltd.'s E. L. Martin 1, 330 out nec sect 6, Wm. Hughes sur A-1732, 3½ mi nw Eden gas field, elev 2164 ft, Cisco 1360 ft, Palo Pinto-Strawn contact 3190 ft, Bend 3610 ft, Marble Falls 3740-3840 ft, Ellenburger 3947 ft, Cambrian (Cap Mountain) 4230 ft, Hickory sand

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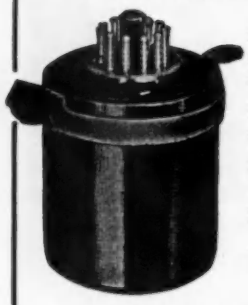

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4382 ft, flow 648 bbls 44-gr, gor 1353/1, via -in, 3,0 gals acid Marble Falls perf 3801-19 ft, td 4392 ft, pb 3980 ft.

Jones County—Failure: West Central Dr. Co.'s Olds 1, nw nw nw T&P Ry. 20, blk 16, elev 1651 ft, abnd 2622 ft.

SOUTHWEST TEXAS WILDCATS

Starr County—Failures: Billstrom & Armstrong s Mary M. Edgerton 1, 490 fr wl 330 fr sl blk 11 and sh 66, Porc 80, 280-ac lse, abnd 1223 ft.

B. H. Cummings' Starr Co. Cattle Co. 1, 330 fr n&el blk 75 330 fr el Porc 89, 47.14-ac lse, sh 60-D, abnd 2854 ft.

LOWER TEXAS COAST WILDCATS

Bee Couty—Oil Discovery: Tom Graham's Theis et al 1, 467 fr nw&nel 500-ac lse, R. S. Barnes sur, pay 3571 ft, perf 72 shots 3573-82 ft, flow 105 bbls, 3/16-in, tp 125 lbs, td 3587 ft.

Bee County—Gas Discovery: S. Chamberlain s H. C. Wood 1, 467 fr n&el 200-ac lse, Jose Maria Castillo sur, pay 5230 ft, perf 5230-45 ft, flow gas, no gge, tp 207 lbs, si 2060 lbs, td 5816 ft.

Goliad County—Failure: Santa Clara Oil Co. et al s Ida P. Huggins 1, 2333 fr nl 467 fr wl blk 3, 2249-ac lse, Maria de Jesus Ybarro sur, abnd 4367 ft.

Jackson County—Failures: Wright Drlg. Co.'s C. M. Hasdorff 1, 330 fr s&wl w 80-acs lot 4, J. Rector sur, abnd 6755 ft.

Wirt Franklin Pet. Corp. s Rose & Sample 1, 534.5 s of RR 330 fr wl 40-ac lse, Thos. H. P. Heard Lge, abnd 2806 ft.

Refugio County—Failure: P. R. Rutherford's L. Zarsky 1, 467 fr nl 1320 ft el se¼ sect 13, Esteban Lopez sur, 160-ac lse, Johnson & Pugh sbdn, abnd 6510 ft.

Victoria County—Failure: Monday Oil Co.'s Ina Dell York 1, 467 fr nw&swl 220-ac lse, Jas. Cheevers sur, Vicksburg 5515 ft, abnd 5710 ft.

UPPER TEXAS COAST WILDCATS

Austin County—Failure: Union Prod. Co.'s John E. Hintz 1-A, 3030 fr el 300 fr nl sect 179 H&TC sur, 702.34-ac lse, Wilcox 8640 ft, abnd 9072 ft.

Harris County—Failure: Traders Oil Co. of Houston's Deepwater Ld. Co. 1, 2254.3 s of RR 2254.3 fr nl 330 fr el 1900-ac lse, Jas. Seymour sur, abnd 7349 ft.

Washington County—Failure: Rutledge & Clark's Strzelecki 1, 611 fr wl 151-ac lse, 359 nw at ra fr road 4 mi n Chapel Hill, abnd in Wilcox 7501 ft.

EAST TEXAS BORDER COUNTIES WILDCAT

Harrison County—Gas Discovery: Rogers Lacy s B. C. Quinn 1, Vashti Gibbs sur, 1 mi w Harleton, Massive anhy 6380-6460 ft, Young 6730 ft, Young porosity 6731, perf 72 shots 6731-64 ft, flow 60 mln gas open, rock pressure 2660 lbs, td 6821 ft.

EAST TEXAS WILDCATS

Freestone County—Gas-Distillate Discovery: Texas Co. s Nancy Ham 1, 467 ewl 509 fr swl 81.2-ac tr, or 535 fr sel 2025 fr m/e/swl R. Lawson sur, 3 mi e by s Teague, elev 494 ft, Pecan 2793 ft, Austin 3707-4033 ft, Woodbine 4421 ft, Buda 4840 ft, Georgetown 5000 ft, Goodland 5583 ft, Paluxy 5930 ft, Glen Rose 6170 ft, massive anhy 7290 to 7312 ft, Rodessa 7415 ft, Pettit 7970 ft, Pettit porosity 7971-97 ft, Travis Peak 8196 ft, 13 min gas, 5-8 bbls 49.2-gr dist per mln, open flow, 3000 gals acid Pettit perf 7970-8018 ft, td 8541 ft.

Freestone County—Failure: Blackwell O&G Co.-Geo. Kimball s Wasson 1, 3400 snl 3078 wel of Sarah McNulty sur, abnd 3308 ft.

Kaufman County — Failure: Ryan Consol. Pet. Corp.'s Brown 1, (OWDD) 660 out nwc Matilda Reynolds sur, elev 426 ft, otd 3065 ft, Woodbine 2510 ft, Georgetown 3120 ft, Goodland 3815 ft, Paluxy 3900 ft, Glen Rose 4100 ft, abnd 4580 ft.

Morris County—Failure: M. J. Delaney & Co.'s Holt 1, 440 ewl 330 snl 541.4-ac tr and Samuel Stewart sur, elev 445 ft, Pecan 2903 ft, Austin 3755-3842 ft, Sub-Clarksville 4115 ft, Woodbine 4363 ft, Georgetown 4729 ft, Ft. Worth 5096 ft, Duck Creek 5251 ft, Goodland 5694 ft, Paluxy 5772 ft, massive anhy 7472-7690 ft, Pittsburg 8335 ft, Travis Peak 8507 ft, abnd 8522 ft.

Navarro County — Failure: Cathrina & Smith's Cope 1, 1320 fr nwl 5150 fr swl Jerimian Latham sur, Austin 1535 ft, Woodbine 2344 ft, Georgetown 2538 ft, abnd 2573 ft.

EAST TEXAS OUTPOST

Wood County — Merigale Failure: Bobby Manziel's Crampton 1, 330 out nec Richard Hare sur 246, 1¼ mi sw of prod, elev 373 ft, cut 1st fault 100 ft above Pecan, base Pecan 3280 ft, Austin 4720-4890 ft, Sub-Clarksville 5071 ft, abnd 5139 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: Bridwell Oil Co.'s Langford-Texaco 2, 1530 nsl 1900 ewl blk 127, J. W. Harris sbdn, abnd 1450 ft.

O. R. Hartt et al s Abercrombie-Taylor 2, 1420 snl 1120 wel S.P. Ry. 2, A-1281, abnd 1400 ft.

Cooke County—Failure: Nu-Enamel Oil Operating Co. s Maupin 1, 330 out sec of 92-ac tr, R. Alexander sur A-13, elev 791 ft, Ellenburger 3896 ft, abnd 3921 ft.

Jack County—Failure: Continental's Ramzy 1, 990 snl 330 ewl sect 4, D. K. Davis sur A-181, elev 1174 ft, base Palo Pinto 990 ft, Village Bend 1390 ft, Bend 4770 ft, Barnett 6440 ft, Ellenburger 6465 ft, abnd 6732 ft.

Wichita County—Failure: Bridwell Oil Co.'s Barton 1, 1450 nsl 1100 ewl AB&M Ry. sur A-809, abnd 2071 ft.

Young County—Oil Discovery: Fleming Oil Co.-Hanion & Buchanan s Granam-Tankersley 1, 330 out nec sw sect 741, TE&L Co. sur, elev 1164 ft, Bend 3780 ft, Barnett 4507 ft, Mississippi 4597 ft, Ellenburger 4730 ft, pump 25 bbls oil, 30 bbls wtr, Strawn broken sand 3397-3425 ft, td 4947 ft, pb 3450 ft.

Young County—Failures: Bennett & Bennett s Bailey 1, 450 ft out sec w½ TE&L Co. sect 60, abnd 870 ft.

Panhandle Ref. Co.'s Cloud 1, 330 out nwc B. F. Taylor sur A-1546, elev 1177 ft, Bend 3522 ft, Marble Falls cong 4250-65 ft, abnd 4500 ft.

NORTH TEXAS NEW PAY TEST

Young County — Fleming-Graham Shallow Oil Discovery: Fleming Oil Co. et al s Sweeney 1, 330 out nwc sect 2917, TE&L Co. sur, elev 1236 ft, Mississippi 4678 ft, pump 6 bbls oil, 60 bbls wtr, Strawn perf 2880-90 ft, td 4697 ft, pb 2895 ft.

NORTH TEXAS OUTPOST

Montague County—Hildreth Extension: A. R. Dillard et al s Lawson 1, 467 w 3652 n of nwc B. Anibal sur, but in N. Kimbro sur A-405, 2½ mi n by w extension, elev 900 ft, Bend 5929 ft, Barnett 6127 ft, flow 1836 bbls 42-gr natural ½-in, Bend perf 5992-6021 ft, td 6157 ft.

WILDCAT STARTS

ARKANSAS

Union County: Atlantic s Goode 1, nw 6-17s-13w, lcn.

CALIFORNIA

Los Angeles County: Richfield Oil Corp.'s Simons 1, 15-2s-12w, Bandini area, lcn.

Orange County: Scoggins & Long's Travis 1, 24-3s-9w, Yorba Linda area, lcn.

Tehama County: Northern O&G Co.'s 1, 6-23n-6w, Paskenta area, lcn.

Kern County: Standard of Calif.'s Hill 84, 19-29s-21e, Temblor area, lcn.

Ventura County: Triunfo Exploration Co.'s Triunfo 1, 13-1n-19w, Triunfo area, lcn.

COLORADO

Bent County: Pacific Western-Frontier Refining Co., sw sw se 12-26s-50w, Caddoa Creek area, lcn.

Jefferson County: West & Wilson's Zang 1, c sw sw 5-2s-69w, 20 mi nw Denver, lcn.

Moffat County: Juniper Drilling Co.'s Sterling 1, ne 30-5n-93w, lcn.

Gled Oil Co.'s Belle P. Randolph 1, se nw 9-9n-93w, Iron Springs structure, lcn.

ILLINOIS

Clinton County: Max Conray's Myer 1, sw nw sw 18-1n-3w, dr.

Coles County: A. M. Meyers' Wilson 1, sw sw sw 15-11n-7e, dr.

Black-Chumbly & Jones' Gaddis 1, nw ne ne 29-11n-7e, lcn.

T. Blake Dirickson's Linder 1, ne se nw 27-12n-7e, dr.

Cumberland County: T. Blake Dirickson's Bigamon 1, sw sw sw 5-10n-7e, lcn.

Effingham County: Geo. H. Engle's Parks 1, nw nw nw 34-7n-5e, lcn.

Jefferson County: Brehm & Robinson's Copple 1, nw nw nw 12-1s-1e, lcn.

Madison County: Lesing Alch's Mick 1, ne se ne 29-4n-7w, lcn.

St. Clair County: C. W. Young's McCurdy 6, sw sw 29-3s-6w, lcn.

Wabash County: R. B. Martin et al's Schernekan 1, se sw ne 35-2n-14w, dr.

Washington County: Glenwood Oil's Morticio 1, ne sw nw 12-2s-1w, lcn.

Wayne County: Central P. B.'s Metcalf 1, sw ne ne 5-2s-9e, lcn.

Aetna Oil s Travers-Ferguson Comm 1, nw sw se 27-1n-9e, lcn.

J. J. Lynn s Laird 1, se ne sw 20-1n-8e, lcn.

White County: Globe O&R's Elizabeth Organ 1, nw nw ne 35-4s-9e, lcn.

KANSAS

Ellis County: Comanche et al's Simpson 1, nw nw nw 10-11s-17w, rur.

Greenwood County: Ralph Brineager's Hamsen 1, ne se se 28-26s-13e, lcn.

The OIL WEEKLY'S TRADING POST

USED EQUIPMENT FORUM

CLASSIFIED ADS . . . EQUIPMENT . . . SERVICES . . . PERSONNEL

FOR SALE

■ LUMBER FOR SALE: Hardwood surveyor stakes. Oil field timbers and lumber. E. J. Galennie, Box 1074, Shreveport, La.

■ Lee C. Moore 94 ft. derrick, with Crown Block and sheaves, excellent condition, standing Denton County, Texas. Make offer. Address: Box 30, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: Complete 5000 foot power rig with 87 foot Lee C. Moore jack knife derrick and 5700 feet of 3½ inch drill stem. Address: Box 36, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: Completely reconditioned Oilwell CT 1715 individual rotary drive consisting of GAK Waukesha, twin disk torque convertor and 17½ Oilwell oilbath rotary. Address: Box 37, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: Wilson Mogul drawworks, complete with double drum and powered by 2 D13000 Caterpillar motors. Unit just factory overhauled. Address: Box 38, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: For Sullivan 200: Complete hydraulic drill head; Automatic chuck; Complete hydraulic controls; Some new Sullivan parts. 2500 feet 2¾ pipe with tool joints. 1500 feet 2⅞ pipe with tool joints. Above located at Breckenridge, Texas. Imperial Exploration Company, 2201 Mercantile Bank Bldg., Dallas 1, Texas. Telephone: Central-5860.

■ 1 Cardwell Model RL Draw Works with Automatic Cat Head. Powered by Model GK Waukesha. This Unit Completely Overhauled. 1 Gardner-Denver 7¼ x 10 Power Pump with 10 Drive Belts. Surge Chamber Suction Strainer. Powered by Model GK Waukesha. This Unit nearly New. Hancock Drilling & Well Service, 7045 Chocolate Bayou Rd., Houston 4, Texas.

■ FOR SALE: 10-acre fruit farm and chicken ranch with modern five-room cottage nicely furnished. Has all conveniences, on Highway 31, Henderson County, $8000. A. R. Lewis, Corsicana, Texas.

■ FOR SALE: Seven 5500 ft. wells, two sands behind casing never been perforated, located Golden Meadow, Louisiana, Field. Wells making about 100 barrels oil per day. Reason for selling, unable to look after properly because of labor situation. Write P. O. Box 1074, Kilgore, Texas.

■ FOR SALE: 300 acres, young pine timber land; three miles from Leesville, Louisiana; offset leased major company. $11.00 per acre. Address: Box 41, c/o The Oil Weekly, Houston, Texas.

WANTED TO BUY

■ WANTED: Second Hand pumping unit for 2500 ft. well. Also lease storage. Give description and location. Address: Box 31, c/o The Oil Weekly, Houston, Texas.

■ WANTED TO BUY: 2500 feet 3½ drill pipe with tool joints. Imperial Exploration Company, 2201 Mercantile Bank Bldg., Dallas 1, Texas. Telephone: Central-5860.

SERVICES

■ To Manufacturers and Distributors. Let us warehouse your stocks, can furnish sales representation also. Warehouses located at Houston, Kilgore and Odessa, Texas, serving Texas, Arkansas, New Mexico, Louisiana and Mississippi. Write, wire or phone. The Brandon Company, Odessa, Texas.

SITUATIONS WANTED

■ Single man, 32, desires position with seismograph or geophysical crew. Foreign or domestic service. Army surveying experience. Available about Dec. 1. George Layman, 1853 Lemoyne, Los Angeles, Calif.

■ Gas and Water Treating Engineer with 12 years experience in natural gasoline industry desires position in technical capacity. Varied experience in analytical testing, water, gas and gasoline treating, dehydration, plant operation, laboratory and plant supervision. Age 34, married, one child school age. References available. Address: Box 40, c/o The Oil Weekly, Houston, Texas.

■ Petroleum Geologist—Over fifteen years experience, desires part time connection in Houston, preferably including office space. Address: Box 42, c/o The Oil Weekly, Houston, Texas.

■ Geologist, desires connection with aggressive organization. Qualifications precludes acceptance of position offering less than $400. Prefer opportunity to participate in plays. Address: Box 43, c/o The Oil Weekly, Houston, Texas.

HELP WANTED

■ Wanted by a consulting geophysical organization: Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 45, c/o The Oil Weekly, Houston, Texas.

■ ARCHITECT WANTED: Experienced in industrial layout, service station design, and general building construction. Experience in petroleum industry preferred. Permanent position—located in Mid-Continent area with large oil company. Address: Box 39, c/o The Oil Weekly, Houston, Texas.

■ WANTED: Oil field equipment manufacturer of international prominence desires to employ two Mechanical Engineers or Designing Draftsmen, with approximately 5 years experience in the design of heavy oil field drilling equipment. Address replies: IDECO, Box 3350, Beaumont, Texas.

WANTED: MINING OR PETROLEUM ENGINEER by Major Oil Company. Recent graduate or with some experience, for Exploitation and Production Engineering work. Training course if inexperienced. Address: Box 33, c/o The Oil Weekly, Houston, Texas.

WANTED: MECHANICAL ENGINEER. Major Oil Company requires graduate Mechanical Engineer for Production Department. Either experienced or inexperienced. Address: Box 34, c/o The Oil Weekly, Houston, Texas.

WANTED: GEOLOGIST by Large Major Oil Company. Minimum requirements B.S. or B.A. degree, geology major. Previous experience not required. Address: Box 35, c/o The Oil Weekly, Houston, Texas.

GEOPHYSICIST

To act as field supervisor of contract parties. Eastern Venezuela. Write to:

THE ATLANTIC REFINING CO.
(Rm. 900), P. O. Box 7258, Phila. 1, Pa.

GEOLOGICAL ASSISTANT

Large Oil Company requires services of experienced man in home office in East. Salary to fit the man. Write full particulars, education, experience, references. Reply to B-53, P. O. Box 3495, Phila. 22, Pa.

GEOLOGIST-SUBSURFACE

For Venezuela, five years experience, preferably foreign.

THE ATLANTIC REFINING CO.
(Rm. 900), P. O. Box 7258, Phila. 1, Pa.

FIELD GEOLOGIST

Exploration work in Venezuela. Should have 3 years experience in mapping Rocky Mountains, California or Foreign. Write to:

THE ATLANTIC REFINING CO,
(Rm. 900), Box 7258, Phila. 1, Pa.

HELP WANTED

WELL GEOLOGISTS

To watch progress of wells in Eastern Venezuela. Care for samples, picks, casing points, core points, etc. Write:

THE ATLANTIC REFINING CO.
(Rm. 900), P. O. Box 7258, Phila. 1, Pa.

ATTENTION! OIL MEN!
Please Advise Your Veteran Friends!

We have two positions available for managers of district sales offices, Houston and Odessa, Texas, oil field equipment company. Preference: returned veterans with former oil company production engineering experience, Texans, 25 to 35 years old, college graduates. Permanent position, outside sales work, salary, and percentage. Send application and photograph to: Box 28, c/o The Oil Weekly, Houston, Texas.

NOTICES

■ WANTED: Have Gasoline rotary rig ready to go, will consider furnishing rig for interest on proven acreage. A. R. Lewis, Corsicana, Texas.

■ WANTED: Out of print geological papers on the Rocky Mountain region. Please list prices. Page T. Jenkins, Powell, Wyoming.

WANTED: OIL & GAS ROYALTIES

Will buy sizable group of oil or gas royalties priced on an income basis.

A. W. ADKISSON
W. T. Waggoner Bldg., Ft. Worth, Texas

POSITIONS WANTED BY SERVICE MEN

■ In the interest of both employers and employes, **The Oil Weekly**, through its Overseas Pony Edition, which is sent free to 6500 former oil men now in the services, has offered to run advertisements from those who will be seeking work once they are discharged. In some cases **The Oil Weekly** has a few more details but, generally speaking, direct correspondence would be advisable. Unless otherwise indicated it may be some time before the person named in the advertisement is available.

■ Young man, age 21, available by November 1, former truck driver and general worker, interested in oil work. Thomas Costello, SM 1/c, U.S.S. Boise 2nd Division, FPO San Francisco, Calif.

■ Employment wanted as pilot with oil company, preferably South America. Experience in Army Air Transport Command, co-pilot Pan-American's flights, Miami-Natal. Have 1600 flying hours. Married, age 25. Can obtain discharge before June, 1946. 1st Lt. Gordon T. Kerr, 4200th AAF Base Unit, Fairfield Air Technical Service Command, Municipal Airport, Chicago 38, Illinois.

■ Want field or refinery work abroad. 3 years' refinery experience, head pipe fitter, pressureman, fireman; 12 years' experience in pipeline and production departments, age 37. Eligible for discharge after November 1, 1945. Ward J. Chadwick, ASN 36-892-791, 3040th Ord. PTR Co., 142nd OBAM Battn., APO 75, c/o Postmaster, San Francisco.

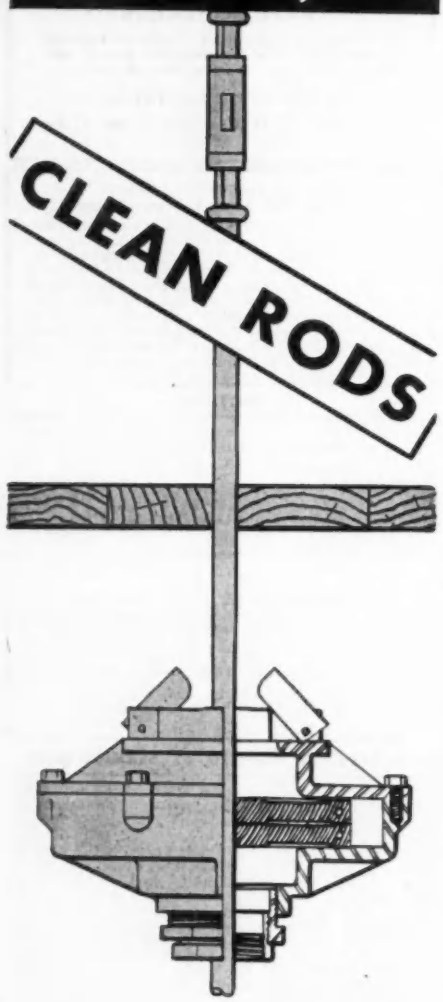
■ Want opportunity with aviation department of oil company. Commercial Pilot's license, in single and multi-engine land, and multi-engine seaplanes; 10½ years' flying experience, 1500 hours Naval time, without accident; qualified overland, overseas navigator, 27, discharged. Lt. (j.g.) Sidney S. Lotz, USNR, P. O. Box 2941, Houston, Texas.

■ Interested in fitting into oil industry in any capacity, anywhere, no dependents, ½ year college. Can type; worked in transit department Federal Reserve and City Banks. Expect discharge in 8 months. Pfc. Gordon H. Council, 18193119, Sect. H, Box 327, Kossler Field, Biloxi, Mississippi.

■ Seeking employment oil industry, perhaps as stationary engineer. Experience: gasoline engines, operation, maintenance, electricity, plumbing, oil field pipeline, rigs. Worked for Housing Authority, aircraft, construction, soap manufacturing companies. Age 34. Expect discharge Jan. 1, 1946. Westley F. Hall, MM 3/c, 225 Gibbs Drive, Ft. Worth 8, Texas.

■ Young man, age 23, who has worked for railroads and various labor jobs, can drive truck, interested in entering oil industry. Expecting discharge within month. Earl Anderson SM 3/c, U.S.S. Boise 2nd Division, c/o FPO, San Francisco, California.

"Best Bet Yet"



UNIVERSAL TYPE SUCKER ROD WIPER

Designed for all sizes of rods. Cast steel body—Plain or safety cover. Adapted to fit pipe from 2″ to 3″ reinforced.

Replaceable double seal discs, made from oil resistant PBX synthetic rubber, Patterson-Ballagh's new development.

See Composite Catalog

Patterson-Ballagh SUCKER ROD WIPER

Los Angeles 1 Houston 10 New York 6

Harvey County: Harbar & Palmer's Strausz 1, sw cor ne 6-22s-2w, dk.
Kearny County: Glenn Smith's Smalley 1, nw sw ne 3-25s-38w, dk.
Sumner County: Aladdin Pet. Corp.'s Bellman 1, ne ne sw 15-30s-1e, dr.
Ed Adair et al's Gardner 1, ne ne sw 3-33s-2e, lcn.

NORTH LOUISIANA

Madison Parish: Sohio's Kathan-Johnson 1, s of nwc 31-18n-11e, Glen Rose test.
Morehouse Parish: Sohio's McDuffie 1, 32-19n-7e, dk.
Tensas Parish: E. C. Johnson's Sawyer 1, nwc 8-13n-14e, mim.

SOUTH LOUISIANA

Beauregard Parish: Magnolia's Lutcher-Moore Lbr. Co. 2-C, 1980 n 660 w of sec 22-5s-11w, 12,000-ft Wilcox test.
E. Baton Rouge Parish: Bankhead Oil Co.-R. Y. Walker's Kleinpeter 1, 895 s 62° e 180 n 28° e fr nec 57-7s-1e, in 58-7s-1e, 7500-ft test.
Iberia Parish: Humble's Mayo Romero 1, start m/ely/s cor sect 2 go nely alg sel 2300 th nwly at rn 650 to lcn in 2-12s-7e, 12,000-ft test.
Union of Calif.'s Delcambre 1, 660 s 660 e of nwc 4-14s-5e, 5 mi sw Avery Island, 12,000-ft test.
LaFourche Parish: Humble's Louisiana Delta Farms Co. 1, start swc go nly alg wl 1980 th ely parallel to sl sect 19 for 980 to lcn in 19-17s-23e, 12,000-ft test.

MICHIGAN

Clare County: Pure's Freer 1, n½ nw sw 18-17n-6w, dr.
Huron County: Pure's Stapleton 1, n½ nw sw 22-17n-5e, lcn.
Isabella County: Sohio's Brassington 1, se nw sw 25-16n-5w, lcn.
Sohio's Vodicka 1, se se se 17-14n-3w, dr.
Mecosta County: Austin Co.'s State 1, nw nw sw 16-14n-9w, lcn.
Montcalm County: Allegan Pipe & Supply Co.'s Williams 1, nw nw nw 36-12n-5w, rig.
Arenac County: Michigan Oil Co.'s Szostak 1, ne sw sw 28-19n-4e, rig.
Isabella County: Sohio's Gas Unit 1, se nw nw 25-16n-5w, dr.
Sohio's Gas Unit 2, se nw se 26-16n-5w, lcn.
J. V. Wicklund's Smith 1, nw nw sw 29-13n-4w, rig.
C. W. Collin's Southwick 1, se sw ne 9-15n-6w, dr.
Kalamazoo County: Wadsworth and McClure's Brockway 1, ne ne se 17-4s-10w, rig.
Kent County: J. W. Lang Co.'s Meek 1, nw sw sw 19-9n-11w, lcn.
Montcalm County: Arenac O&G Co.'s Moreland 1, se nw nw 12-10n-6w, lcn.

MISSISSIPPI

Greene County: Humble's Oscar E. Waer 1, ne se 33-5n-8w, lcn.
Warren County: Frontier Oil Ref. Corp.'s F. C. Martin 1, nw nw 1-16n-5e, lcn.

MONTANA

Yellowstone County: Farmers Union Central Exchange's Well 1, c sw nw 31-2n-28e, Huntley structure, lcn.

OKLAHOMA

Cleveland County: Stanolind et al's Horn 1, ne ne ne 22-8n-1w, lcn.
Greer County: Stephens Pet.'s School Land 1, ne nw, dr.
Hughes County: T. J. Lynch's Poe 1, sw se 32-9n-11e, dr.
Logan County: Four States Oil Co.'s Bowers 1, nw nw nw 36-17n-3w, lcn.
Noble County: J. E. Trigg's Patch 1, sw se se 5-21n-2w, rur.
Deep Rock et al's White 1, sw ne ne 19-23n-2w, lcn.
Okfuskee County: Summit Drlg. Co.'s Dohner 1, sw sw ne 12-11n-10e, dr.
Payne County: Skelly's Butcher 1, 2-18n-4e, sw ne ne, dr.
Home Gas Co.'s School Land 1, nw ne sw 36-18n-4e, rog.

WEST TEXAS

Pecos County: Helmerich & Payne's Mrs. O. L. Barnes 1, c s½ of s½ H&GN Ry. 130, blk 10, 4500-ft Ellenburger test.
Winkler County: R. R. Harrell et al's Burton Lumber Co.-Humble 1, c nw nw PSL 27, blk 27, 4200-ft test.

WEST CENTRAL TEXAS

Coke County: Warren Pet. Corp.'s R. B. Kirk 1, 660 out nwc s½ John Johnson sur 309, 6250-ft test.
Jones County: Eltex, Ltd.'s Claude Russell 1, 330 out swc n 80-ac lot 5, DeWitt CSL sur 125, 3500-ft cable test.

SOUTH TEXAS

Atascosa County: Quintana Pet. Corp.'s G. H. Smith 1, 330 fr nw&swl W. Waggoner sur 201, 6750 s of Muil 1, 320-ac lse, 6000-ft test.
Quintana Pet. Corp.'s C. Muil 1 (owdd), 2714 fr nel 5000 fr sel 1589-ac lse, J. C. Mattison sur 467, to deepen to 10,000 ft.
Bastrop County: J. O. Williams et al's A. E. Rosanky 1, 330 fr s&wl 1161-ac lse, Musgrove Evans sur, lcn.
Calhoun County: Quintana Pet. Corp.'s W. A. Shofner Est. 1, 1875 fr nwl 330 fr swl 730-ac lse, 3400 ne of Boyd 1, Bonifacio Rodrigues Lge, dr 870 ft.

SOUTHWEST TEXAS

Jim Hogg County: Milam Drlg. Co.'s J. M. Tygart et al 1, 660 fr e&sl El Sordo Gr 23, 480-ac lse is e½ and sw¼ of sur 23, 5000-ft test.

LOWER TEXAS COAST

Bee County: W. C. McBride's L. N. Connally 1, 1400 fr sw&sel 490.55-ac lse, CCB Co sur, 4300-ft test.
Hidalgo County: Dee Davenport's Boston-Texas Ld. Tr. 1, 660 fr sl 23,000-ac lse and Los Magulles Gr, 4212 fr el gr, 3275 w 660 n of nec sur 883, 6500-ft test, ru.
Jim Wells County: W. R. Quin's Robert Adams 1-A, 330 fr nl 1650 fr el blk 6 Waldron O&G sbdn Robt. Adams rch, 80-ac lse, GH& RR sur 104, 5700-ft test.
Victoria County: L. D. Cain's A. W. Carpenter 1, 330 fr nw&sw of nw 80 acs of tr 6, 164-ac lse, T. G. Burnham sur, 4500-ft test, ru.
H. J. Porter's D. L. Miller 1, 330 fr m/ely/n&el 210-ac lse, J. S. Hendershot sur, 5250-ft test, ru.
Monday Oil Co.'s C. E. Stubblefield 1, 660 fr nel lse 467 fr Guadalupe River, Polito Castillo sur, 6700-ft test.
Taylor Ref. Co.'s R. F. Meyer 1, 660 fr nw&swl 202-ac lse and blk 48, Andrew Pelts sur, 6500-ft test.

UPPER TEXAS COAST

Harris County: Paul E. Rutledge-Harris T. Clark's Jos. F. Meyer 1, 660 fr sl 1980 fr el H. Aiken sur, 40-ac unit, 7500-ft test.
Orange County: Arkansas Fuel Oil Co.'s Lutcher-Moore Lbr. Co. 1 (owdd), 1333 s 2475 e of nec lot 8, T. W. House sbdn, otd 9540 ft, pb 8110 ft, deepening to 10,000 ft.
Trinity County: American Liberty Oil Co.'s Houston County Timber Co. 1, 330 fr sl 2310 fr wly/el 40-ac lse, Alexander Henry sur, 8500-ft test.
Magnolia's Oscar Brown Gibson 1, 1050 fr sl 50 fr wl C. Sanchez surm 10-ac tr, 9000-ft test.

EAST TEXAS

Freestone County: W. C. Curry et al's O. Burleson 1, 483 snl 903 ewl 80-ac, 2250 fr nel 3700 fr nwl James Sparks Lge A-36, 2 mi sw Streetman, Woodbine test.
Leon County: Claude Bell's C. C. Cole 1, 330 ft fr nwl 1097 ft fr nel 222-ac lse, 4000 fr sel swl Thomas H. Garner sur, Wilcox test.

NORTH TEXAS

Archer County: Bridwell Oil Co.'s Langford Investment Co.-Texaco 3, 1530 nsl 1630 wel blk 127, J. W. Harris sbdn, 1500-ft test.
Bridwell Oil Co.'s Oil Investment Co. 1-F, 3127 ewl 2157 nsl blk 125, J. W. Harris sbdn, 6000-ft Ellenburger test.
Timberlake-Kelleher & Harris' D. L. Wolfe 1, 450 nsl 1050 wel sw¼ S.P. Ry. 1, A-415, 1450-ft test.
Clay County: Continental's S. W. Heard 1-C, 467 nsl 1400 ewl TE&L Co. sect 3222, 6600-ft Ellenburger test.
Foard County: Nat. Assoc. Pet. Co.'s Maggie Hammonds 1, 3293 nsl 1590 wel H&TC Ry. 41, blk 18, 3600-ft test.
King County: Superior Oil Co.'s Pitchfork Land & Cattle Co. 1, nw nw nw sect 171, J. H. Gibson sur, 7000-ft Ellenburger test.
Montague County: A. V. Grant et al's Mrs. H. E. Durham 1, 330 e 500 n of sec sect 91, Kaufman CSL, but in Francis Escobar sur A-216, 4000-ft test.
Nat. Assoc. Pet. Co.'s R. R. Alexander 1, 330 out nwc of tr, A. Buffington sur A-31, 2 mi s Nocona, 6500-ft test.
Wichita County: Scott Bros.' L. MacKechney 1, 1250 snl 150 ewl sect 18, Lge 2, Denton CSL, 1250-ft test.
Frank Wood et al's R. Y. Smith 1, 200 nsl 550 ewl of 100-ac blk 836, M. A. Bush sur A-24, 2000-ft test.
Cooke County: Magnolia's Sarah Wilson 1, 330 n&w of swc S. D. Brown sur A-95, but in M. L. Webster sur A-1118, 1½ mi e Gainesville, 3000-ft test.

WYOMING

Sheridan County: Texas Co.'s Forbes 1, ne¼ 18-55n-85w, spud.

Kansas Allowables Set

Kansas Corporation Commission fixed the state's daily oil allowable at 260,000 barrels for October, a decline of 15,000 barrels below the August figure. Chairman Richard B. McEntire gave as the reason for the cut that Kansas has been producing for the war effort above its maximum efficient production.

Cut the Quibbling

"You'd better jump out of the window. Here comes my husband!"

"But we're on the 13th floor!"

"Never mind! Jump! This is no time to be superstitious!"

Ignorance is Bliss

Zeke, the hillbilly, took unto himself a wife, and away they went to their mountain home. The first year they came down to get groceries and had a new baby with them. Coming down again the next year, they had another baby along. The third year rolled around and they showed up with the third baby. When the fourth year arrived Zeke came down with his wife and the three children.

The storekeeper looked them over, then said: "Well, Zeke, no new child this year, huh?"

"Nope. Y'know—my wife and I finally found out what was causing that."

Poet's Nook

Girls who will not kiss at
Partin'
Don't get took out much, that's
Sartin'.

Encore

Said the big brown rooster to the
little red hen,
"You haven't laid an egg since I
don't know when."
Said the little red hen, "You
dear old soul,
"Haven't you heard of birth control?"

Logical Lothario

"How did you find the ladies at the dance?"

"Oh, I just opened the door marked 'Ladies' and there they were"

This Curious World

The newest wrinkle in women's apparel is an item that resembles slacks in front and a skirt behind. The idea is to have milady look good both coming and going.

Science is very resourceful. It couldn't open a Pullman window, so it air-conditioned the train.

A certain friend of ours hates the taste of food but always gorges himself because he's nuts about bicarbonate of soda.

Said one cigarette to another: "Hope I don't get lit tonight and make an ash of myself."

A woman has much in common with a typewriter—touch the wrong places and you get a lot of bad words.

The curse of drink is being stuck with the check.

Then there's the story about the Scotchman who spanked his children and put them out in the flower bed to cry.

The best way to keep fish from smelling is to cut off their noses.

The Full Life

Three boys were bragging on their fathers.

"My Dad," said the first, "writes out a few short lines, calls it a poem, sends it away, and gets $10 for it."

"Shucks," said the second. "My Dad makes some dots on a piece of paper, calls it a song, sends it away, and gets $25 for it."

"Pikers," said the third scornfully. "My Dad writes out a sermon on a piece of paper, gets up in the pulpit and reads it, and it takes four men to bring in the money."

Something in Common

Determined to cure her husband of his evil ways, she transformed herself into a ghost with the aid of a sheet and met him at the front door when he came home drunk.

"Who're you?" he inquired amiably.

"I'm Satan," she hissed.

"Thasso? Glad to meet you, brother. I married your sister."

The Watch Ran Down?

"Mother, he's the man for me. Every time he takes me in his arms I can hear his heart pounding."

"Better be careful, dear. When your father was courting me I was fooled for a year by his dollar watch."

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MEN IN THE INDUSTRY NEWS

Brig. Gen. Walter B. Pyron, vice president of Gulf Oil Corporation on leave of absence for five years, has received a discharge from the Army and will return to his duties with Gulf on the first of the year.

Gen. Walter B. Pyron

Pyron will be sent to London, England where he will be in charge of all Gulf producing operations on the Continent and in the Near East.

He has been stationed in Washington serving as coordinator of fuel and gas supplies to the Army and Navy since October, 1941. For outstanding service in this work, General Pyron won the Legion of Merit.

R. N. Keppel, southern region sales manager for Standard Oil Company of New Jersey, has been elected a director and vice president and appointed general manager of marketing. **J. E. Skehan,** who has been with the company for more than 43 years, has resigned as general manager of marketing, but will remain as a director until January 1, when his retirement from active service will become effective.

Keppel joined the company 25 years ago and became president of Standard Oil Company of Pennsylvania in 1941.

W. L. Massie has been named division manager for The Texas Company in California. He fills the vacancy left by the recent promotion of **Balthis Allen, Jr.,** to assistant manager of industrial relations for the Pacific Coast. **A. A. Morrison** was appointed assistant to the new division manager.

Lieut. Colonel William H. Strang, U. S. Army, was visiting in Houston last week. Col. Strang was a member of the editorial staff of THE OIL WEEKLY before entering the service in March, 1941.

Jack Danglade, Lovington, New Mexico, producer, received the Distinguished Civilian Service Award, highest civilian citation conferred by the Navy, after serving as head of the negotiation section during the war.

Earl Carlton of Henderson, Texas, and **Cecil D. Brown** of Shreveport, have incorporated the B. & C. Oil Company with capital stock of $24,000 to operate in the Carthage field in Northeast Texas.

J .C. Parks, C. E. Gates and **T. R. Hancock,** all of Houston, have organized the Tres Palacios Oil Company with headquarters in the West Building, Houston.

Olin Bell, Humble Oil & Refining Company, has been elected president of the Houston Geological Society. Other new officers are **S. G. Gray,** consulting geologist, vice president; **Harry Killian,** consulting geologist, secretary; and **Martin Sheets,** Stanolind Oil & Gas Company, treasurer. Elected to the society's advisory committee were **A. F. Childers, Jr.,** Gulf Oil Corporation; **Harold Geis,** Barnsdall Oil Company; and **L. H. Morris,** J. S. Abercrombie Company.

Olin Bell

A. Dale Benedict, district land man of the Oklahoma-Kansas division for Tide Water Associated Oil Company, with headquarters in Tulsa, was guest of honor at a dinner in Tulsa at which he was presented with a 29-year service emblem. He joined Tide Water's scouting department in 1925 and became manager of the lease record section in 1941 and was recently promoted to his present post.

E. G. Kendall, president of Lake Oil Company, and **Wendall Young,** who has been in charge of the Benedum-Trees properties in the Bebee pool in Oklahoma for seven years, have organized the Oklahoma Machine & Supply Company at Ada, Oklahoma.

V. L. Jones has resigned from the Stanolind Oil & Gas Company and is now affiliated with C. H. Frost Gravimetric Surveys, Inc., as a geophysicist.

John N. Backus, who has been on military leave of absence for 2½ years, has returned to Stanolind Oil Purchasing Company and is stationed as scout in Tyler, Texas. Before entering the service Backus was scout in Mattoon, Illinois, and in Tulsa.

Harold Freeman, Iraq Petroleum Company, Kirkuk, Iraq, has completed about half of a six-weeks tour of the United States. At present he is in Tulsa, after visiting New York and Houston. From Tulsa, he will go to Dallas and then to the West Coast.

G. I. Page, operating engineer at Lawton, Oklahoma, for the Public Service Company of Oklahoma, has been promoted to superintendent of operations and construction for the company's eastern and southwestern divisions, effective October 1. He is a graduate of Iowa State College, a fellow in the American Institute of Electrical Engineers, and joined Public Service in 1927.

Dr. Sidon Harris of Fort Worth is president of the newly organized Southern Geophysical Company with home offices in the Sinclair Building, Ft. Worth. Dr. Harris has a background of 12 years in the geophysical industry, having spent the past ten years with the seismograph department of Stanolind Oil & Gas Company. He previously was with Humble Oil & Refining Company in Houston and has served on the faculties of Rice Institute, University of Texas and Oklahoma A. & M. College.

Dr. Sidon Harris

Associated with him in the Southern Geophysical Company are **Paul A. Ledyard** and **Rolland E. Davis.** Ledyard has a ten-year background in geophysical supervisory positions. Davis began work in the seismograph industry near his home in Stafford, Kansas, ten years ago and supervises the field parties for Southern Geophysical Company.

Jodie Bob George has joined Sinclair Prairie Oil Company at Tulsa as a safety engineer.

W. A. Yost, Jr., has been appointed assistant manager of the steam turbine department of Allis-Chalmers, Milwaukee, Wisconsin. Formerly in charge of the department's marine division, Yost, among other duties, will assume direction of sales of steam turbines and the gas turbine. Before joining Allis-Chalmers, he was with the Elliott Company.

W. A. Yost, Jr.

R. N. Landreth has been named assistant to the vice president of the general machinery division. He has been special representative for the company in Washington, D. C.

C. H. Schiller has been appointed manager of market research and sales analysis for American Steel & Wire Company, subsidiary of United States Steel Corporation. **H. M. Ridlon** was named assistant manager of the same division, and **A. W. Ruttkamp,** formerly manager, has been assigned special duties for the general manager of sales. Headquarters of all three will be in Cleveland.

Deaths

Clarence F. Succop, president and director of American Roller Bearing Company, Pittsburgh, died October 4. A member of American Petroleum Institute and the Anti-Friction Bearing Society, he was widely known in these industries. Born in Butler, Pennsylvania, in 1888, he was graduated in electrical engineering from Union College, Schenectady, New York. He was connected with the General Electric and Western Electric Companies until shortly before founding American Roller Bearing Company in 1914.

Clarence F. Succop

Frank M. Hedges, district manager in North Texas since 1940 for Republic Supply Company, died October 5 in Wichita Falls. Hedges joined the firm in 1916 as mailboy in the general office in Houston. After World War I, he returned to the company and was located in the North Texas area.

Harry C. Tyrrell, Tulsa independent oil man and philanthropist, died October 5. Tyrrell, 70, was born on a farm near Belmond, Iowa, and after engaging in farm and ranching activities went to Oklahoma in 1907 to form the Pulaski Oil Company in partnership with his father.

His activities were successful and he built up considerable holdings in Oklahoma, Kansas and Texas in both oil and real estate. He was a leader in YMCA work and helped to organize the organization in Tulsa in 1909, serving as president of the board of directors for 15 years. He helped to establish Camp Rogers Kemp for boys and was an organizer of the Tulsa Community Chest in 1923. During World War I, he served on the Council of Defense.

Robert G. Harper of Tulsa died October 8 of injuries suffered in an automobile accident near Hiawatha, Kansas. Harper, 46, was program chairman of the Mid-Continent Section, American Society of Mechanical Engineers.

Carroll J. Burton, accountant for Stanolind Pipe Line Company for more than 25 years, died in Tulsa October 3. Burton, 56, was a veteran of World War I.

The Solution For Solving the Problem of Boiler Scale and Corrosion

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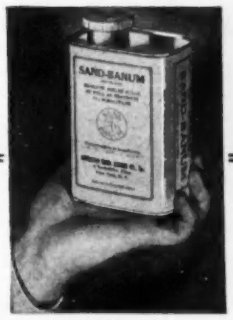

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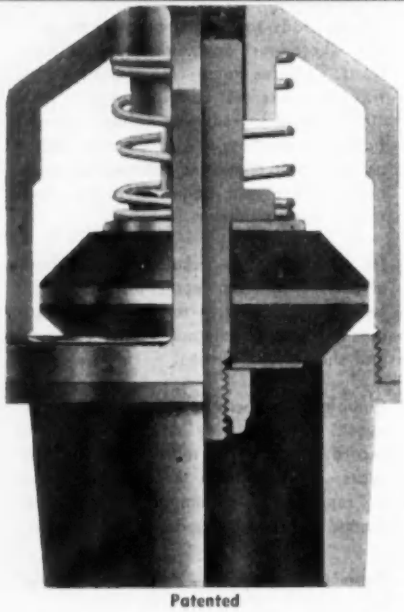

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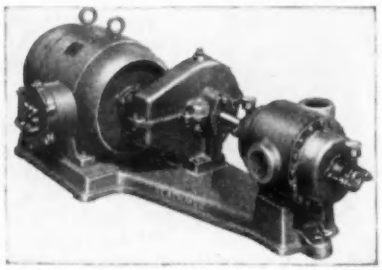
NEW EQUIPMENT . . . LITERATURE

1—Pumps

Blackmer Pump Company, Grand Rapids, Michigan, has perfected a series of pumps for handling propane and butane. The basic design follows the Blackmer "bucket" design principle, and the pumps are self-adjusting for wear.



The problems of lubrication and sealing at the gland have been solved by development of a reservoir containing glycerine entirely surrounding the stuffing box. The glycerine acts as both lubricant and sealing agent. No gas can reach the stuffing box. The bearings are sleeve type, one on either side of the rotor.

The pumps are fitted with removable liners which may be replaced when worn. Piping and drive are not disturbed by this operation.

2—Asbestos Gaskets

Greene, Tweed & Company, New York, has expanded its line of Palmetto packings to include high-pressure folded asbestos gaskets, asbestos metallic sheet packing, and asbestos metallic gasket tape.

Each gasket of the high-pressure folded asbestos type is handblocked to accurate size, and the seam is on the outside, away from the pressure. These gaskets are made from brass wire inserted asbestos yarn, woven into a strong cloth, coated and cemented with a heat-resisting compound, folded and pressed into shape.

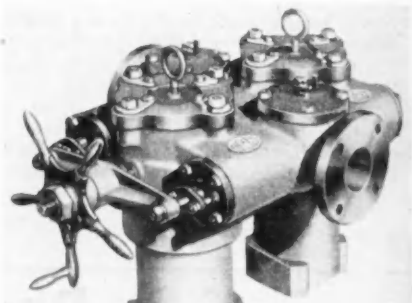
The woven cloth from which the gaskets are made is also available in sheet form. The sheets are supplied with a heat-resistant coating and are suitable for cutting gaskets for cylinder heads of gas, oil and steam engines.

3—Pipe Line Strainer

J. A. Zurn Manufacturing Company, Erie, Pennsylvania, announces a duplex vertical chamber disc type pipe line strainer designed to assure continuous flow. The device is operated by a large handwheel that reverses valves simultaneously with minimum pressure drop. Capacity flow is assured at all positions of the handwheel.

The position of the strainer basket with respect to the basket chamber is such that the flow section is proportional to the flow needs at all points, thus minimizing pressure drop.

Removable covers provide easy access to the basket chamber and permit easy and complete cleaning. Large handholes above each valve assembly permit servicing of the valves without removing the strainer.



The unit is said to protect all types of pumps, traps, valves, regulators, asperators, injectors, control units and other primary equipment. It is made of cast bronze, steel, semi-steel, and cast iron. The basket is of perforated brass, monel, or other specified metals.

Use This Convenient COUPON for Additional Information

Check below the numbers identifying items on which you want additional information. Mail coupon to The Oil Weekly and your request will be forwarded to the manufacturer.

THE OIL WEEKLY
P. O. Box 2608, Houston 1, Texas, U.S.A.

Please have manufacturers send me, without obligation, more information on items shown in October 15 issue of The OIL WEEKLY as checked below:

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

In addition to information checked above, I would like more data on products or services advertised elsewhere in this issue by _____ Company

Name _____ Title _____

Company _____

Address or P. O. Box _____

City _____ State _____

(To avoid delay PRINT or TYPE clearly name, company and mailing address)

4—Rock Bit

H. C. Smith Oil Tool Company, Compton, California, has announced a long-tooth rock bit for faster drilling through sticky and sandy shale.

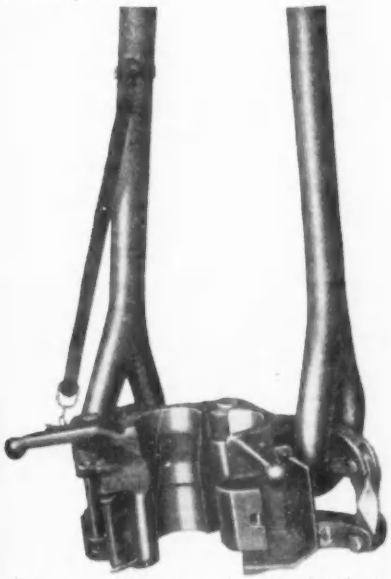
This bit is known as the K-2, and

embodies an improved bearing design which is said to promote long life. The cross-section cutters have long, widely-spaced teeth, hard-faced with tungsten carbide before hardening.

5—Elevator

Byron Jackson Company, Los Angeles, has developed the BJ Type "MGG" Elevator, designed to handle 20,000-foot strings of 4½-inch externally upset drill pipe. The elevator has a safety factor of 4 to 1, it is said.

Although similar in construction to the type "G" elevator, this one has been heavied up throughout to take the increased load of the longest strings of pipe. To minimize the wedging action which takes place in handling long, heavy strings of externally upset drill pipe, the seating taper of this elevator is contained within the body rather than on the top bore.

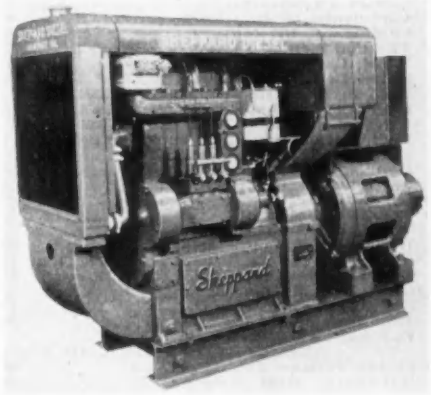


A heavy stirrup-type center latch that cannot accidentally be opened fits over a heavy lug on the door. A latch lock is provided, that serves to hold the latch securely in place and as a handle when opening. The latch lock must be moved through an arc of approximately 30 degrees before the latch can be released; then a continuing movement of the latch lock completes the opening of latch.

To insure always bringing the elevator to the derrick man in a level position, an oil resistant synthetic rubber balancing strap is recommended. This strap is sold as an accessory.

6—Load-Control

The R. H. Sheppard Company, Hanover, Pennsylvania, announces development of a completely automatic load-control for Diesel-powered generating set which cuts operating time of the power plant to periods when power is actually required. It is claimed that use of the load-control reduces fuel con-



sumption and prolongs life of the equipment.

The load demand on the power circuit controls the starting and stopping of the power source. The flick of any lighting or appliance switch on an electrical circuit supplied by a Diesel-powered generating set equipped with load-control will automatically start the generator. Power is immediately available. Turn off the switch, and the device immediately stops the power plant. No special wiring is required to install the load-control apparatus. It is connected to present service leads and is available for single or three-phase generators.

Literature

7—Oil Burning Specialties

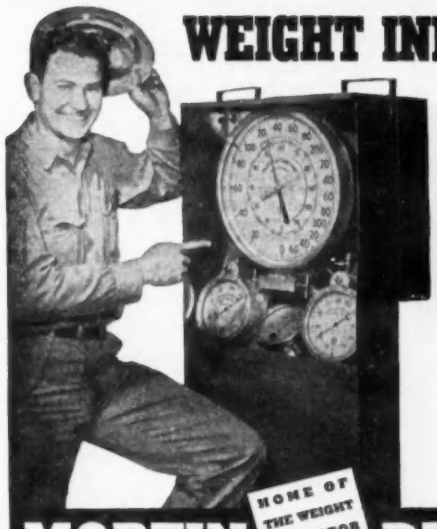
The Volcanic Specialties Company, Alliance, Ohio, has published a catalog on oil burning specialties, including equipment for the economical preparation and consumption of fuel oil. A special item is the Volcanic Oil Mill designed to reclaim sludge and prepare it for use as a fuel.

8—Roller Chain Belts

Baldwin-Duckworth Division of The Chain Belt Company, Springfield, Massachusetts, has published an eight-page folder on roller chain belts. A detailed description of the roller chain features is presented, with a table of specifications of the more popular sizes with their list prices.

Use the Coupon

For free copies of Manuafcturers Literature or more information on products described on these pages, use the convenient mailing coupon on page 94.



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TRADING POST SECTION

ON PAGE 89 OF THIS ISSUE

Kuwait Oil Movement

Kuwait Oil Company plans to be moving around 30,000 barrels per day from its Kuwait properties in the Middle East, by March, 1946. Originally it had been hoped to start such movement by the first of the year.

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